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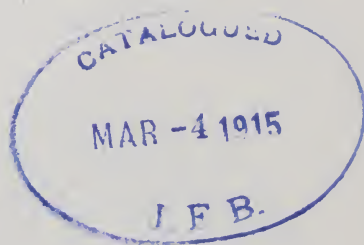
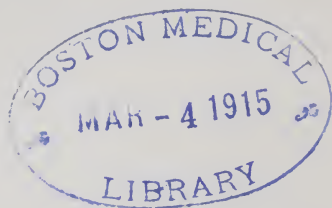
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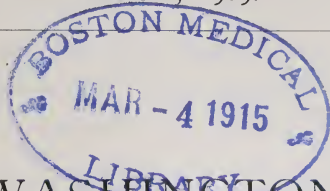
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THE BRYCE-TEACHER EARLY HUMAN OVA.*

By A. F. A. KING, A. M., M. D., LL.D.,

Washington, D. C.

Drs. Thomas H. Bryce and John H. Teacher, lecturers, respectively, on Anatomy and Pathological Histology, in the University of Glasgow, Scotland, have lately published a very elaborate memoir with numerous figures and colored plates, in which they describe two early human ova, one of them being uterine, and the other an ovarian pregnancy.

The discovery of an early human ovum constitutes an event of considerable importance in the science of Embryology. So far there have been observed only about a dozen such specimens, the ages of which come within nineteen days or thereabouts.

The famous specimen of Dr. Hubert Peters, obtained by him in 1895, from a woman who committed suicide three days after the failure of her expected menstruation to appear, has been cited in our textbooks, as the earliest human ovum known. Peters states in his first report of the case, (*Verhandlungen der Gesellschaft Deutscher Naturforscher und Aerzte*, 1897-1898, pp. 175-178, Leipzig), that it appeared to be about eight days old, but might be only two or three days. Some of our textbooks call it six days old. No one can say which is correct.

It is nearly fourteen years since Peters' ovum was discovered. The report of Drs. Bryce and Teacher embraces an account of two cases, one in the uterus and another in the ovary, while the uterus in the ovarian case also contained an embryo that remained

*Read before the Medical Society February 3, 1909.

until full term after the ovarian specimen had been removed by celiotomy. The uterine case is first described. The authors in their preface remark that—

“The extremely young ovum which is the subject of the first paper in this memoir, represents the earliest stage of any primate except *Tarsius* yet recorded, and merits careful and detailed description in respect that it pushes back the limits of the unknown in a sensible degree.”

After this statement, and after having become accustomed to the idea of Peters' ovum having been somewhere between three and eight days old, it is with some disappointment that we learn from Bryce and Teacher that their “extremely young ovum” was somewhere between thirteen and fourteen days of age, being the result of an abortion sixteen and one half days after coitus. The disappointment, however, is mitigated in some degree, when we find that the methods of calculation by which they determined the age of their own ovum, to be from thirteen to fourteen days would, if applied in the same manner to Peters' ovum, make that one a day older, viz: fourteen to fifteen days. But even on this basis, the “extremely young ovum” of the authors is only one day younger than that of Peters.

Of the age of the ovarian case they seem to be still more in doubt. On one assumption they consider it may be “anything between fourteen and twenty-two days, and on another assumption from twelve to fifteen days.”

The uterine case is especially valuable as illustrating the process of embedding of the human ovum in the uterine mucosa (decidua) and histological character and activities of the trophoblast. It must be remembered that the trophoblast is a structure developed from the ectoderm inside the vitelline membrane, and that it undergoes a tremendous increase after the vitelline membrane breaks and disappears, and the human egg (so to speak) is thus *hatched*. After this event the phagocytic trophoblast proceeds to eat its way into the decidua and the ovum thus becomes permanently fixed. Should the vitelline membrane disappear while the ovum is yet in the fallopian tube the trophoblast would eat its way into the tubal mucosa and a tubal pregnancy result.

All this, of course, is comparatively old and common know-

ledge, based chiefly on examination of allied forms—mouse, hedgehog, guinea pig, etc.

Bryce and Teacher remark (p. 39):

“While the present ovum is the youngest yet described it is not yet sufficiently early to *demonstrate the actual mode of implantation in man*, but it brings us nearer to a comprehension of the process in several respects.”

After considering the appearances observed in their own case and comparing them with those of allied forms, they describe the embedding of the human ovum as follows (p. 40):

“The ovum having attained the stage of an early blastocyst and measuring about two mm. in diameter (*i. e.* approximately the size of the mature oocyte), comes to rest in a slight depression, but neither a crypt nor a fissure, in the endometrium, destroys the surface epithelium and, continuing its destructive activity, passes into a space in the decidua which has thus been produced. Necrosis followed by solution (digestion) of a considerable mass of the endometrium follows, resulting in the formation of an implantation cavity. So far we agree with the views expressed by Graf v. Spee regarding the human ovum in 1905. Changes leading to the production of decidua begin immediately after the solution of the epithelium, and the elevation is formed which is the characteristic resting place of all the four earliest ova at present known. The mouth of the implantation chamber is probably blocked by a mass of bloodclot the cavity having meantime been filled by blood shed from the opened-up maternal capillaries. The present specimen shows a narrow orifice only one mm. in diameter, and the sealing substances is rather thrombus-like material than bloodclot. The relatively wide gap (eight mm.) in the surface of the mucosa closed by bloodclot and fibrine, which characterizes the ova of Peters, Jung, Stolper and Graf v. Spee, is here entirely absent. If we have proved our thesis that the present ovum is the earliest yet recorded, we must conclude that this gap is not the portal of entrance properly so called—it is much too large—but is a secondary formation, being produced by the subsequent destructive activity of the trophoblast threatening to destroy the root of the implantation chamber.”

After this statement, it appears somewhat inconsistent to find on the next page a diagram representing their own specimen, in which “P. E.” indicates the point of entrance, which they have just said is *not* the portal of entrance. And if it really is not, by what other portal the ovum entered the implantation cavity

we are not informed. They probably mean that the *size* of the opening has been increased by phagocytosis.

“The ovum is at first free in the implantation cavity” (p. 41). The trophoblast from a very early stage shows an inner cellular layer (cyto-trophoblast) and an outer plasmodial layer (plasmodi-trophoblast). The plasmodial portion throws out buds which stretch towards the walls of the decidual chamber, and it is continually being increased by active proliferation in the cellular layer.

The destructive action of the plasmodial trophoblast eventually opens maternal capillaries, with consequent hemorrhage into the implantation cavity. The blood, which does not coagulate, serves to nourish the ovum, and circulates among the plasmodial budding processes, some of which become, later on, attached to the decidua and thus anchor the ovum, and contribute finally to form chorionic villi. The most surprising exhibit as shown in colored plate No. III, is the tremendous quantity of plasmodial trophoblast, its mass apparently occupying eight or ten times as much space as all the rest of the ovum together.

In our early student days we were led to regard the ectoderm and the entoderm as single layers of cells, but now we see that the ectoderm, even before the embryonic body itself has assumed any definite shape—before any indication of the medullary groove and medullary canal appears—the ectoderm produces upon its external surface this relatively enormous growth of trophoblast, of such massive thickness as to constitute the greater part of the entire bulk of the developing ovum, and which secures its early nutrition and fixation.

The cellular part of the trophoblast and the thicker (more external) layer of its plasmodial portion are well seen in the Bryce and Teacher's Plate III. The embryonic rudiment consisted of two closed vesicles—a larger and a smaller one. The larger (the amnio-embryonic cavity) was unfortunately torn, but was partially restored by piecing together several of the fragments produced by the twenty-four sections into which it had been cut. The smaller vesicle represented the entodermic vesicle, or future yolk sac.

Bryce and Teacher remark that

“This is the earliest phase of the human embryo yet observed. In Peters' ovum the rudiment consisted likewise of two closed vesicles, but the larger or amnio-embryonic vesicle showed a

differentiation of the *floor* into embryonic ectoderm ; and the *roof* into the amnion. Our ovum shows a still earlier condition of the amnio-embryonic cavity in which there is as yet *no distinction*" (italics mine) "between embryonic and amniotic ectoderm."

It is interesting for us tyros in embryology to note that all of these early human ova do away with our old conceptions of the amniotic cavity being formed by the sinking in of the embryo and the rising up and folding over it of the extra embryonic portion of the blastodermic vesicle. We now know that in human ova the cavity of the amnion is a closed sac from the very beginning ; it never was open.

Bryce and Teacher make one suggestion that, so far as I know, is entirely new, viz : that the destruction of tissue by the trophoblast is not altogether a phagocytic process, but rather one in which the plasmodi-trophoblast *produces an enzyme*, that first kills and then *digests* the decidual tissues with which the blastocyst comes in contact.

Their early ovum also seems to demonstrate that the early mesoblast fills the entire blastocyst, and that it is by a subsequent splitting of this mesodermic mass that the extra-embryonic coelom is formed.

THE OVARIAN PREGNANCY.

In the ovarian case the woman was unwell for the last time November 20, 1903. On January 1, 1904, she had some pain in the back and abdomen, which continued several days, and on January 8th a more severe attack of pain occurred ; on the 9th a diagnosis of tubal pregnancy, yet unruptured, was made. On January 13th the symptoms indicated rupture ; the abdomen was opened and three pints of blood found in its cavity. The tube was normal, but projecting from the ovary was a hemorrhagic mass about the size of a walnut, which was diagnosed as an ovarian pregnancy. The uterus was enlarged, and an intra-uterine pregnancy was suspected, which proved to be correct ; the pregnancy went on to term, and a full-term child was delivered August 19, 1904.

On examination of the ovarian specimen the chorionic vesicle was found in the center of a little cavity within a recent blood-clot, lined by a layer of fibrine and ovarian tissue in a state of coagulation necrosis. The vesicle itself was collapsed and much

folded. Its longest measurement (in this collapsed state) was 1.35 cm.; when rounded out it could not have reached a centimeter. The villi measured from two to three mm. in length, and were covered with epithelium "identical in all respects with that of a uterine ovum of corresponding age."

The remains of an embryo were found within the collapsed chorion, but were damaged beyond reconstruction.

Bryce and Teacher remark that—

"The relation of the chorionic vesicle to the corpus luteum constitutes the most important point in the specimen."

They conclude that the fertilizing spermatozoon entered through a rupture in the Graafian follicle, and that the ovum was retained after fertilization within the follicle by closure of this rent. After going through the earlier phases of segmentation, to become a blastocyst the ovum "behaved as a uterine ovum would have done." "It attacked the wall of the follicle and imbedded itself in the vascular connective tissue immediately without the capsule." Thus the ovum lies outside the corpus luteum and Graafian follicle, and is separated from these structures by an intervening zone of ovarian stroma, which, however, presents at one point a necrotic area, perfectly comparable with the point of entrance observed in the decidua of the uterine case.

This ovarian specimen also serves to accentuate another point about which there appears to have been some question, viz: as to whether the plasmodial portion of the trophoblast was in any degree derived from the uterine structures. The fact that it was developed in the ovary shows it to be a fetal structure, and in no way a derivative of uterine epithelium.

Following the discussion of their own case Bryce and Teacher give a brief account of six other cases of ovarian pregnancy, reported by Catherine van Tussenbroek, Kelly and M'Iroy, Mendes de Leon and Holleman, by Thompson, by Hewetson and Jordan-Lloyd, and the case of Franz, and mention is made of still other cases.

In conclusion might I suggest that possibly many early ova are lost that might be recovered if they were looked for. It might be well in all cases of delayed menses, even when pregnancy is not suspected, to examine the discharge for young ova, by breaking up

the clots in a little water and seeking for flakes of decidua with their contained blastocysts. A flake of membrane no larger than a finger nail, containing an elevated tubercle the size of a pinhead, is the thing to look for, as shown in the case of Bryce and Teacher. Should such a specimen be found it should be immersed in a 30 per cent. alcohol solution and sent to a skilled microscopist. Possibly some of our lady practitioners might induce their patients to become interested in this research; it would certainly come better from them than from the male portion of the medical fraternity.

So again our gynecological surgeons should not only make this search in cases of uterine curettage, but in cases of salpingectomy the tubes might be slit open and examined with a lens for fecundated ova that have not yet passed into the uterus. Excised ovaries might also be examined for a similar purpose, remembering to look for ovarian cases in masses of bloodclot varying in size—one case having been found in a clot as large as the fist in Douglas' Cul de Sac.

From the March number of the *Amer. Jour. Obstet.*, pp. 441, 442, we learn that Professor P. Leopold has recently (1907) published another elaborate volume describing an early ovum, of which the reviewer says:

“The ovum of which this book is a minute description is probably the youngest human embryo on record, being even smaller by 0.2 mm. than that of Peters, upon whose descriptions our present knowledge of the early implantation of the human embryo is largely based.”

Bryce and Teacher refer to an early ovum of Leopold's dated, however, 1887, eight years before the discovery of Peters' specimen, so that Leopold's recent publication probably refers to a second specimen of later date observed by him.

To most of us, perhaps, the facts and phenomena of embryology, like those of astronomy, may seem to be of little practical use. But may we not regard them as a reserve collection of old keys? There is no telling at what moment one of them may unlock for us a door through which unexpected things of beauty and utility may be observed, or help us to open some unexplored reservoir containing a luxury of useful treasures.

NOTE.—In 1873 Dr. Robert Lee, of London, reported an early ovum in which *cilia were seen* on the villi of the chorion, an observation which he says cannot be made after keeping the specimen in alcohol (*Brit. Med. Jour.*, Sept. 26, 1908, p. 951), which probably explains why Bryce and Teacher make no mention of such cilia.

Dr. I. S. Stone said that in all the interesting study of the human embryo the most interesting part is its mysterious character. Even the known evolutions of the embryo are most difficult to comprehend from the usual descriptions, and for most of us very many illustrations are necessary to convey the correct impressions. He had studied embryology rather critically in a study of chorio-epithelioma and had found it most fascinating. He had been struck by the statement of Joseph Price, made years ago, that it is foolish to expect an ovum to grow in the ovary; certainly there is no mucous membrane, no structure to receive favorable to implantation of chorionic villi.

Dr. Roy D. Adams had been much interested in the paper because he had had occasion recently to make a study of the subject. The charts presented by Dr. King showed the proper relation between amnion and embryo. Most of the text books indicate the formation of the amnion by the invagination of the ectoderm, carrying with it part of the mesoderm.

As to Dr. Stone's remarks, Dr. Adams had been interested to see certain reports showing that the ovum may be implanted in any tissue derived from the mesoderm; never in tissues derived from the ectoderm.

Dr. Stone did not wish to be understood as doubting the possibility of implantation on peritoneum; he doubted the possibility of development of the fetus in the substance of the ovary.

Dr. Wood said that the implantation of the ovum was simply due to its digesting the tissues with which it comes in contact, for the ovum and syncytial cells have the digestive powers of all the digestive organs of the body. Le Boeuf had conceived the idea "that the ameba at some time possessed the functions of all the internal organs but during evolution had specialized owing to the complexity of requirements." The fecundated ovum is merely a perfected ameba, the analogue of which should be found in the ocean.

It is evident that syncytial cells are only amebae and possess the digestive powers of all the digestive organs plus the functions of the lungs and kidneys, and his experiments with syncytial extract suggested that syncytial cells by synthesis construct the embryo from the effete nitrogenous material in the maternal blood.

Dr. Borden said that Dr. King had expressed the opinion that

from the study of the early embryo in question we must reconstruct our ideas as to the formation of the amnion. Up to this time we have understood that the amnion is formed by the upgrowth of the ectoderm carrying with it part of the mesoderm; without this upgrowth he was unable to see how the process takes place. Could Dr. King explain how to reconstruct the prevalent ideas upon the subject?

Dr. King said with regard to Dr. Stone's remarks that the trophoblastic tissue of the embryo makes it perfectly possible for implantation to occur in the ovary; and having been implanted it will begin to grow like any other germinal body, but, like any other germinal body, it will not grow properly, it will not develop, because the soil is not proper for it. There have been too many authentic cases of ovarian implantation to doubt the possibility of it.

To Dr. Borden he replied that the new conception of the amnion indicates that it was never anything but a closed sac within the mesoderm, thus obviating the necessity for the outgrowth of the ectodermic invagination with the mesoblastic lining.

A recent writer has said that all so-called early human ova are at least one month old. The thought that strikes him most forcibly is that in the chick, after thirty-six hours incubation there may be found several vertebral segments, gill slits, a rudimentary heart, etc., while the human ovum after fourteen or fifteen days has made little progress in development. In the chick however, fecundation occurs several weeks before incubation begins.

COULD NOT READ IT.

AMONG THE OUT-PATIENTS at an ophthalmic hospital one was an old man. He was turned over to one of the younger specialists, who began to test in the usual manner.

"Can you read that?" he asked, as he pointed to the card placed on the wall.

"No sir," replied the old man.

The doctor then put on stronger glasses.

"Well," he inquired, "can you read it now?"

The old man shook his head, saying, "No, not a word."

After repeating this performance several times the doctor was about to turn him over in despair to his more experienced superior, when the old man quietly exclaimed: "You see, doctor, I never learned to read."—*N. American Journal Homœopathy.*

INTERNAL HEMOSTASIS; ITS PHYSIOLOGICAL
AND PHARMACOLOGICAL ASPECTS.*

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The subject of internal hemostasis is intimately connected with questions of physiological and pharmacological interest, particularly the physiology of blood coagulation, and the pharmacodynamics of certain drugs. The complexity and the extent of these questions is such that we can only incompletely examine them in the limited time at our disposal.

To begin, we may briefly review the series of phenomena which occur after the section or rupture of a vessel of moderate caliber. Very rarely such an accident may be fatal, as for example in hemophilia or where the vessel is situated inaccessibly within the parenchyma of an internal or vital structure. Death, however, is not the usual result. The great majority of instances of hemorrhage from a medium-sized vessel tend to recovery through the operation of physiological processes. The vessel, if severed, tends to contract within the surrounding tissues and certain factors intervene which tend to stop the bleeding. First of all, there may be a lowering of the arterial tension, and this may be so considerable as to produce syncope. Every one is acquainted with the good effects which this accident has upon arrest of hemorrhage. In the second place, the contact of the extravasated blood with the neighboring tissues sets at liberty certain substances which bring about coagulation of the blood. In this way spontaneous hemostasis is realized by different mechanisms, each contributing its share to the formation of clot. To determine what part is played by each of these factors, and to what extent they may be influenced by artificial means, is the object of this paper.

The ideal hemostasis is that secured by the surgeon's ligature. The direct constriction of the bleeding vessels thus obtained is quite independent of the physiological processes involved in spontaneous arrest. But today, since the discovery of adrenalin, the physician himself is prepared to secure an almost ideal local hemostasis in situations where even the boldest surgeons have

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rightly feared to go. The future will undoubtedly develop new methods of introducing this substance or its less toxic synthetic congeners recently obtained into recesses of the body where the surgeon's ligature can only with difficulty and danger be placed. The ligature, however, still remains the method of choice for obtaining an immediate and definite hemostasis wherever it can be applied. Unfortunately this perfect method is limited in its application, generally speaking, to external hemorrhage.

In recent years the domain of surgery has been much widened in this respect. The surgeon now applies the ligature in situations which were formerly deemed inaccessible. The stomach was long ago invaded. In 1898 Kocher advised gastrotomy with ligature of the bleeding vessels in hematemesis from ulcer. Many others have since followed his example, nevertheless the method has not met with general approbation on the part of the surgeons themselves. Hartmann, for example, noted eight deaths in twelve cases and advised against operation. Other surgeons followed his example and at the present day many are to be found who are more conservatively inclined in this direction than some physicians. Even more debated has been the proposal to operate in case of intestinal hemorrhage in typhoid. Here the majority of surgeons are much less united on surgical intervention than they are in perforation. Several causes coöperate to diminish their enthusiasm. First, the majority of the cases recover by spontaneous arrest of the bleeding; secondly, the operation is attended by great mortality, and, thirdly, the bleeding point is often not an isolated vessel but a more or less extensive area of bleeding surface. In this connection it may be mentioned that one of our distinguished surgeons, Dr. G. T. Vaughan, has proposed in desperate cases to secure hemostasis by invagination of the bleeding bowel.

The limitations imposed upon surgery in the treatment of internal hemorrhages are increased by the existence of some pathological conditions, notably certain diseases of the liver, and hemophilia, the presence of which may create severe, even fatal postoperative hemorrhage. The domain, therefore, of surgery in securing hemostasis is a restricted one in internal nontraumatic hemorrhage, and we are therefore forced to look toward medical means for assistance in this regard. But here, also, the reed upon which we lean seems fragile and uncertain. Never-

theless we may hope that the progress of science will develop a medical hemostasis much more perfect than any in existence today.

The present subject naturally divides itself into two main subdivisions: first, hemostasis by means which are intended to effect the coagulation of the blood; second, hemostasis by means which act upon the vascular system modifying the caliber of the vessels and altering the blood pressure. A complete treatment of the questions of physiology and pharmacology involved is quite out of the question. It will, however, be necessary to go into some detail with respect to both.

Under normal conditions the blood in the vessels is and remains fluid, so that coagulation belongs to the class of pathological phenomena. The capacity to clot, however, possessed by normal blood is a physiological one. The phenomenon of coagulation can be well observed in a drop of fresh blood under the microscope. The blood corpuscles at first equally distributed through the plasma become collected into clumps and rouleaux and at the same time strands of a tough and stringy character appear, constituting the substance called fibrin. Collected in larger quantities in a vessel blood coagulates in a few minutes. The rapidity of the process differs in different animals, being quickest in the blood of birds, which coagulates almost immediately on being withdrawn from the blood vessels, and slow in the case of horse's blood. Before the commencement of coagulation the corpuscular elements begin to sink and the process of fibrin formation takes place in the overlying plasma. This upper layer contains a relatively large number of white corpuscles which sink lower than the red. After the clotting blood stands for a time the coagulum becomes more and more contracted, the clear plasma more abundant, so that finally two distinct formations are demonstrable, the clot and surrounding plasma.

The process thus briefly described can be changed in many ways by artificial means. In the first place, it may be stopped or greatly hindered by cold. It is accelerated by heat. It does not occur at all if the blood is carefully removed in the blood vessel itself. For example, if a section of the jugular vein of a horse be removed between two ligatures and carefully hung aside, the corpuscular elements will gradually sink to the bottom, the clear plasma will remain above and clotting will never occur. If,

on the contrary, a needle be inserted into the interior of the specimen a clot will form. This experiment demonstrates the existence of a special coagulation inhibiting function of the vessel endothelium. But the blood remains fluid, at least for a considerable time, in contact with foreign bodies if the surface of those bodies is absolutely smooth and free from roughness. Thus coagulation can be hindered by collecting the blood in a vessel the interior of which has been rendered smooth and nonmoistenable by oil or paraffin; and if the surface of the blood is covered with oil to prevent contact with foreign matter the blood will remain fluid.

Blood can be rendered permanently incoagulable by removing from it its fibrin-forming substance. Similarly to the removal of the fibrin, it has long been known that coagulation may be inhibited by removing or by precipitating the soluble salts of calcium contained in the blood. Thus if the thousandth part of its weight of sodium oxalate is added to the blood, thus precipitating its calcium, coagulation is prevented. The re-addition of a small quantity of a soluble calcium salt will produce coagulation. Sodium fluoride, soaps and citrates act in a similar way to the oxalates. Of other neutral salts much larger quantities must be added to hinder coagulation; thus an equal volume of ten per cent. sodium chloride solution or one-third volume of saturated magnesium sulphate solution is required to prevent coagulation. In blood thus treated the corpuscular elements will subside and the plasma mixed with salt solutions may be removed. That it is only the excess of salts which hinders coagulation in these cases is proved by the fact that the plasma salt solutions coagulate as soon as they are sufficiently diluted with water.

The rôle played by the salts of calcium in the coagulation of the blood has given rise to much discussion since it was first mentioned by Green in 1887. The limits of this paper will not permit of any detailed review of this subject. It is now known that calcium salts are necessary to the formation of fibrin ferment. Besides the oxalates, fluorides, citrates and neutral salts of sodium and magnesium a number of other substances are known which hinder or prevent coagulation when added to the blood. Among these are peptone, sugar solutions, malt diastase, and extract of the leeches' head or hirudin.

From these general considerations it appears that a certain

combination of circumstances must exist in order that the blood may coagulate, and that so long as it circulates through the vessel under normal conditions these circumstances are never physiologically present. In the blood plasma several albuminous bodies are contained. One of these is a globulin so nearly allied to fibrin in its general characteristics that it is believed to be the mother substance from which fibrin is formed, and to this substance the name fibrinogen has been given. This substance is also present in various exudations, but because of the absence of fibrin ferment, these fluids are not spontaneously coagulable. The fact that the presence of calcium salts is indispensable to the action of fibrin ferment, and that their precipitation by oxalates prevents coagulation, gives rise to the assumption that fibrin ferment or thrombin arises from the union of a parent ferment, prothrombin, with a soluble salt of calcium, and this is acknowledged to be the case. Fibrin ferment can readily be separated from the blood and identified as a nucleo-proteid. It does not exist in circulating blood. Not only is the coagulating principle absent from circulating blood, but that which spurts from a vessel does not contain it during the first few seconds. Very soon, however, this principle appears, provokes coagulation, and is found in the serum which exudes from the clot. Plasmas which are spontaneously incoagulable are so merely because they do not contain fibrin ferment, such as the oxalated plasma above mentioned. If this plasma contained fibrin ferment it would coagulate. If to oxalated plasma is added a small quantity of serum coming from the normal anterior coagulation, even if this serum has been mixed with oxalate before being added, coagulation will occur. This shows that oxalated plasma does not contain a coagulating principle with which the serum is abundantly provided, and also that the presence of oxalates does not prevent the ferment from transforming fibrinogen into fibrin.

According to the classical doctrine relating to the origin of blood and lymph coagulation, the phenomenon is associated with and dependent upon an anatomical destruction of a white corpuscle. In other words, a true leucolysis is supposed to occur involving a majority of the leucocytes; they escape from the vessels and a liberation of fibrin ferment occurs. This hypothesis is regarded by many physiologists as erroneous, and it is contended that the leucocytes are not destroyed and that the co-

agulating ferment escapes from the leucocytes as a physiological secretion according to the loss of osmosis. Dastre considers the emission of ferment-forming substance from the leucocyte to be due to divers conditions of the surrounding media, the most important of which is the osmotic condition (hypotonia).

The production of fibrin ferment must then be regarded as a manifestation of the physiological activity of the leucocytes.

Anticoagulating substances acting upon the formation of fibrin ferment act either by fixing the calcium of the plasma or by preventing the liberation of nucleo-albumin from the cell. Some may act in both ways; the oxalates act by precipitating calcium, the nucleo-albumin passes into solution in the plasma, remaining there unmodified because of the absence of calcium salts. The extract obtained from the leech's head acts by preventing the liberation of nucleo-albumin from the cell. Besides this, it possesses the property to a certain extent of opposing the action of the ferment. The active ingredient in peptone plasma which prevents coagulation is proteose, which, acting upon leucocytes, sets free two antagonistic substances, one coagulating, the other non-coagulating. The first is retained by the liver, the second passes into the blood and prevents coagulation. Effects similar to those induced by proteose are induced by injection of eel's blood serum and by extract of lobster muscle.

Wooldridge was the first investigator to experimentally produce intra-vascular coagulation. He obtained this result by injecting nucleo-albumin of the thymus gland. Injected suddenly into the jugular vein of certain animals this substance produces almost instantaneous coagulation, followed by death in a few minutes. Snake venom gives the same results as the thymus nucleo-albumins. The explanation for this action of nucleo-albumins is that they act in the blood like prothrombin, unite with calcium salts to form ferment and thus bring fibrinogen to coagulation.

Finally, the accelerating influence upon coagulation of contact of the blood with the tissues themselves is very important. As was before stated, if the blood of birds is removed from the vessels by means of a paraffin canula its coagulation is considerably delayed, while if it comes into contact with the tissues of the animal it almost instantly coagulates. The acceleration is due partly to the presence of nucleo-proteids in the tissues which act like fibrin ferment and partly to the physico-chemical character

of the tissues acting upon the leucocytes. Very recent experiments by Bouchard show that the provocative elements of coagulation are rare in the portion of blood first extravasated, but become abundant in the last.

We have reviewed the main facts connected with the physiology of blood coagulation in order that we may more critically analyze the methods for controlling internal hemorrhage which are in use today and which depend for their activity upon an effort to accelerate the process. First and foremost among these methods is the use of the salts of calcium. Sir Ambrose Wright, of England, was largely instrumental in popularizing the calcium salts in the treatment of hemorrhage. He claimed to have obtained good results in hemophilia and hemorrhage by the administration of calcium salts hypodermically and by mouth. He stated that the addition of one-fourth to one-half per cent. calcium chloride solution to the extravascular blood of hemophilics reduces the clotting time and that the internal administration of calcium salts is of great benefit in these cases. Wright believed that typhoid hemorrhage can be controlled and also prevented by the internal administration of calcium. He also thought that the calcium content of the blood is increased after the internal administration of the salts, particularly the lactate, which he states is more rapidly absorbed. Wright's claims are open to criticism from several points. It is worthy of mention that they have been attacked lately in this country by Robertson, Illman and Duncan. These authors have repeated Wright's experiments, with the exception of those upon hemophilics, using the latter's technic in determining coagulation time. They found that the coagulation time of the blood is noticeably retarded during the febrile stage of acute infectious diseases. This observation is in agreement with the findings of Wright. Contrary to his investigations, however, they found that the calcium salts have no effect upon coagulation time nor upon the quantity of calcium in the blood. A critical examination of the physiological and pharmacological action of calcium tends only to increase one's scepticism of its practical availability as a hemostatic. Even the soluble salts of lime are absorbed with great difficulty and slowness from the alimentary canal. They retard fluid absorption in the intestine and it is presumed that they would act as saline purgatives were they not so readily precipitated by

alkaline salts. Almost all the lime taken as food or drug is passed through the bowel unchanged, whether the salt administered is a soluble or insoluble one. The small quantity which gains admission to the blood circulates as an albuminate and is slowly excreted. The only way materially to increase the lime salts in the blood is to inject them directly subcutaneously or into the vessel. The excess then becomes gradually withdrawn from the blood and excreted, partly by the urine as carbamate, but mostly by the epithelium of the colon. The small quantity of calcium absorbed from the stomach and intestine has no effect except to replace lost calcium in the tissues. But the food always contains an abundance of calcium salts, and given as medicine the latter have no specific action except that elicited by the cation, as the bromide ion in calcium bromide, the hydroxyl ion in calcium hydrate. When injected, however, directly into the blood the soluble calcium salts are poisonous, and Wright has reported some instances of sloughing following their hypodermic injection.

Although it is true, then, that the administration of lime salts by ordinary methods can never produce any excess of lime in the blood, the question arises as to whether the organism ever suffers from a deficiency of lime in the tissues and whether this deficiency if it exists can be remedied by giving the salts of lime. In the young and growing animal such deficiency is provocative of disease. Rickets is one of these diseases, but here the difficulty is not with any deficiency of lime in the food or in the blood, but to inability on the part of the bones to appropriate the calcium which is offered to them in abundance. The presence of traces of lime in the tissues has been shown to be necessary for the efficiency of heart action, voluntary muscle activity, nerve irritability, epithelial function, etc., and its relation to coagulation has been already sufficiently discussed. But when we come to the proposition to treat with calcium cases in which the blood seems less capable of clotting than normally, as in hemophilia, the difficulties become immediately apparent. In the first place, it is not possible to increase the calcium content of the blood by the internal administration of the metal. In the second place, the absence or deficiency of coagulation in these diseases is not due to lack of lime salts in the blood. Finally, the clinical evidence is not very strong in its favor.

The extension of lime salts to the treatment of all forms of internal hemorrhage, pulmonary, gastric, intestinal, cerebral and visceral, has taken place. In these cases, however, it is not even contended that the coagulability of the blood is reduced. The arrest of the hemorrhage is due to other factors rather than to the calcium.

Closely related to the calcium treatment of hemorrhage is that by gelatin. This substance contains a small quantity of calcium. The introduction of this substance into medicine as an internal and local hemostatic was due to certain investigations reported in France, in which the coagulation time was reported to be shortened. Later investigations have not confirmed these results. Clinical reports in a great variety of conditions—aneurism, hemoptysis, gastric, intestinal, renal, uterine and other bleeding—have been conflicting. Tetanus has occurred in some cases. As a local hemostatic it is much inferior to adrenalin, and internally it is valueless. The use of gelatin for this purpose is fast disappearing and bids fair soon to become obsolete.

Another method of provoking internal hemostasis which is supposed to be founded on physiological induction is the treatment by injection of various blood sera. Leary has recently reported twenty cases of various hemorrhagic conditions treated by the hypodermic injection of fresh rabbit-blood serum. The credit, if any there be, of first using animal sera in the treatment of hemorrhage, is properly given to Weil, who wrote in 1905 upon the pathogeny and serum treatment of hemophilia. Leary appears to base the treatment upon the following data. Firstly, he claims physiologists have long recognized that the contact of blood with fresh serum or tissue juices hastens coagulation. The latter part only of this statement is strictly correct. Blood serum as usually prepared is defibrinated and does not contain fibrin ferment, consequently being devoid of fibrinogen and thrombin it cannot coagulate spontaneously nor stimulate coagulation. Secondly, Schmidt's experiments seem to show that during coagulation an excess of fibrin ferment is set free and is contained in the serum after separation of the clot. If this is strictly true why does not the injection of serum into the veins of an animal provoke intravascular clotting? Thirdly, Kohler demonstrated many years ago that the filtrate obtained after mincing a freshly formed clot if injected intravenously in quantity into the animal from which the

blood was taken produced thrombosis. Exactly so, because sufficient fibrin ferment or nucleo-albumin is obtained to produce the effect of intravascular clotting. But intravascular clotting would not constitute a therapeutic effect. As a matter of fact, it is well known that the hypodermic injection of various animal sera, as in diphtheria- and tetanus-antitoxin, does not produce intravascular clotting, nor has it been demonstrated that such injections increase the coagulability of the blood. The explanation, therefore, for the good effects, if any there be, of animal sera in the treatment of hemorrhage must be sought in some other direction than in the assumption that fibrin precipitating substances are introduced, for if this were the case the blood would coagulate in the vessels with equal facility as at the exact point where the hemorrhage is located.

Blood sera have also found their way into therapeutics in the treatment of hemoglobinuria. Vidal and Rostaine claim that in hemoglobinuria there is a deficiency in the blood of the normal antisensitizing elements which protect the corpuscles ordinarily from sensitizing substances. They find that *in vitro* the addition of a small quantity of antisensitizing substances to the plasma of hemoglobinurics removes from this fluid its special property of sensitizing the red corpuscles to cold. They have treated some cases by antisensitizing serum obtained by injecting an animal repeatedly with large doses of human serum. These authors claim that the hemoglobinuric attack produced ordinarily at will by immersing the hands in cold water is prevented. This interesting result brings up the question, much discussed at the present time, of the nature of the substances present in blood upon which the phenomena of cytolysis as well as immunity depend. A discussion of these broad questions of blood physiology and pathology would be manifestly out of place here, nevertheless it may be proper to refer to the marked tendency of the times towards simplification of these topics in great contrast to the complicated hypotheses advanced by Ehrlich and the German school. The separate existence of alexins, complements or cytases on the one hand, and sensitizing substances, intermediate substances, amboceptors or phagocytes on the other, together with bacteriolysins, precipitins, agglutinins, aggressins, anti-phagins, virulins and opsonins may be said to reside rather in the imagination of their authors than in the blood itself. Even

the duality of amboceptors and complements is doubted by some recent writers, Victor Henri for example, who considers all these blood reactions, such as hemolysis, as ordinary reactions occurring between complex colloidal substances. Even when simplified, however, these phases of blood physiology shed little if any light upon internal hemostasis.

One other attempt to secure internal hemostasis by seeking to accelerate blood coagulability remains to be considered. This is the administration of liver extract. The basis of this treatment seems to be the fact that the liver is supposed to be concerned in the formation of fibrinogen. At least it is true that after extirpation of the liver or its degeneration by phosphorus poisoning the fibrinogen content of the blood is lowered. We have already seen that after proteose injections the liver is responsible for the retention of nucleo-albumin and the liberation of histon in the blood which prevents coagulation. These and other considerations too numerous to mention indicate the importance of the liver in the maintenance of normal conditions in the blood, the existence of which is necessary for coagulation. But granting the physiological importance of these facts, it does not necessarily follow that the introduction of dead liver tissue into the alimentary tract can in any way accelerate blood coagulability; in fact, there is every reason why it should not. The administration of dried extract of pig's liver as an internal hemostatic is another example of misplaced analogy, many others of which can be found in opotherapy.

It will be seen from all the above considerations that the general theory of treating internal hemorrhage by attempting to increase blood coagulability is defective. It must be very rare indeed that hemorrhage is ever dependent upon any deficiency in the blood of its albumins, nucleo-proteids and mineral salts upon which coagulation depends. Furthermore, it is usually impossible to apply any of the methods so far suggested to the bleeding point itself. This does not mean that the future may not develop some effective method. The two forms of energy—electricity and light—both of which may be readily localized, offer a fruitful field of investigation in this direction. So far their action has not been studied. The action of x-rays upon the blood corpuscles and blood-forming organs has been somewhat investigated. It is known that myeloid tissue is stimulated to hyperplasia by

irradiation, notwithstanding which a leukopenia is always observed, due to lymphoid necrosis. If the liberation of fibrin ferment were concomitant with destruction of the leucocytes the x-ray would offer the means of increasing the formation of thrombin. But we have already learned that the liberation of fibrin ferment from the blood elements is not dependent upon their destruction but upon their physiological activity.

It remains now to consider as briefly as possible the subject of internal hemostasis from a pharmacological standpoint. The multitude of drugs which have been and are used in the treatment of internal hemorrhage is an example of the *nimia diligentia medici*. It is not my purpose to mention these individual drugs by name, merely to set forth the reasons often self evident why they are ineffective, my desire is to analyze the principles of pharmacodynamics directed toward the control of hemorrhage with a view of determining how far we may expect the functional alterations produced by drugs to effect its amelioration.

In the first place, among the multitude of drugs which possess a reputation of hemostatic efficiency, we may select the following as certainly deserving of individual examination: Opium, adrenalin, nitrites, ergot, hydrastis, digitalis, strychnin, salt solution and the astringents. All of these substances with the exception of the tannins are used in hemorrhage because in one way or another they affect the circulation or blood pressure. The question naturally arises as to whether in a given case we desire to produce vaso-constriction or vaso-dilatation. Drugs which constrict the systemic vessels raise the general pressure, and the contrary is the case with vaso-dilators. It is difficult to conceive what advantage is to be gained in internal hemorrhage by raising the general blood pressure. Indeed, the general disposition of the present day is to eliminate the vaso-constrictors, at least those which act markedly upon the splanchnic area. Drugs which actually do contract the systemic vessels, such as adrenalin intravenously—ergot, hydrastis, digitalis, etc.—do not affect all the blood vessels to the same extent. This may be due to the fact that the vessels may in certain situations be deprived of their nerve supply, or may contain but few unstriated fibers in their muscular coats, or may be affected by pathological changes in their walls which have destroyed their elasticity and therefore their power to contract. Pharmacodynamic investigations have shown

that general vaso-constrictor drugs act most intensely upon the splanchnic or abdominal area and less intensely upon the vessels of the thoracic, cranial and peripheral area. Adrenalin, for example, when injected into a vein produces an intense constriction of the splanchnic vessels, and then in order of intensity, the skeletal muscles, kidney, spleen, uterus, liver, lungs, brain and coronary vessels. The muscular coats of the pulmonary and coronary vessels are devoid of nerves and the cerebral and hepatic vessels are very poorly supplied. Therefore general vaso-constrictors of the adrenalin type constrict the vessels of the splanchnic area and thus raise the general pressure, this being highest in the vessels most constricted, namely, those of the abdominal cavity. But in no case does this constriction go on to total obliteration of the lumen of the vessel, and therefore any bleeding vessel situated within the territory of the drug's activity would be made to bleed more freely. These considerations force us to admit that general blood pressure-raising drugs are contraindicated in internal hemorrhage. The question is only modified in form when we seek to consider the effect of drugs which act selectively upon groups of vessels and unstriated muscle, as in the case of ergot and hydrastis. Here the general blood pressure may or may not be raised. In either case the drug fails to act serviceably, because if it increases the general blood pressure it may increase the bleeding, and if it constrict the bloodvessel in the affected territory it can only do good by obliterating the lumen of the vessel, which it can but rarely accomplish. The complete abandonment of vaso-constrictors in the treatment of internal hemorrhage must eventually come about from the appreciation of these facts.

Vaso-dilators, however, are not open to these objections, and it is becoming daily more recognized clinically that drugs which produce a fall in the general blood pressure have a favorable influence towards checking hemorrhage. In attempting to lower the blood pressure we are simply imitating nature, which interposes this phenomenon in every case of severe hemorrhage. It was mentioned at the beginning that it is a matter of common observation how effective is syncope in cases of hemorrhage. Syncope is, of course, but the *tout ensemble* of lowered pressure. In the blood vessels of the pulmonary area nature has interposed few, if any, vaso-constrictor fibers; vaso-dilators are found in abundance. Is it not possible that this adaptation is rendered

necessary, at least to some extent, by the frightful possibility of pulmonary hemorrhage under high pressure? The vessels in the cranial cavity and brain are poorly supplied with vaso-constrictors, but more richly supplied with vaso-dilators. Is not the reason identical? The splanchnic area is most sensitive to vaso-motor drugs and reacts to both dilator and constrictor drugs because of its rich supply of both sets of nerves. The skeletal muscles are not richly supplied with either. We think it may be laid down as an axiom that the most important principle in the treatment of hemorrhage is undoubtedly the lowering of the blood pressure. Bearing this in mind, we immediately eliminate digitalis, hydrastis and strychnin from our list of internal hemostatics, for in all these cases the effect sought, or, at least, the effect produced, is vaso-constriction. Both digitalis and hydrastis produce a marked rise in blood pressure, the former through a combination of medullary, cardiac and vascular action, the latter through vaso-motor center stimulation. Both are therefore contraindicated. Strychnin acts less powerfully than hydrastis, but in the same direction, producing its effects by stimulating the vaso-motor center; it is therefore contraindicated in internal hemorrhage.

There are two other vaso-constrictors, however, which are well worthy of some discussion, namely, adrenalin and ergot. The vaso-constriction produced by adrenalin and due to its content of amino-pyrocatechine is elicited only by the actual introduction of the drug into the vessels. Its action is upon the terminal filaments of the sympathetic nerves which supply the muscular coats and is always in proportion to the richness of the nerve supply to the vessel. Consequently the splanchnic or intestinal vessels, which are so richly supplied with sympathetic filaments, contract most vigorously, raising the general blood pressure, while the vessels in the skeletal muscles, lungs and liver are much less powerfully affected, and those in the brain and heart scarcely at all. The blood is forced out of the areas where the vessels are most constricted and collects in those parts which are little affected. Adrenalin is destroyed in the stomach when internally administered and none of it reaches the blood in a condition capable of producing its typical effects. It has been found that the administration of four cc. of 1 to 1,000 adrenalin chloride solution fails absolutely to produce any rise in the general

blood pressure which can be measured by the hemodynamometer. One-seventh of one cc. introduced directly into the circulation of man will produce a very evident rise in the blood pressure. It was shown by Dixon, and I have repeated the experiment myself, that the injection of ten minims of a one-tenth solution of adrenalin chloride into one arm while simultaneously recording the blood pressure in the other, fails to produce any rise demonstrable by the hemodynamometer. The adrenalin produces a powerful local constriction of the bloodvessels in the neighborhood of the injection, but it is soon decomposed, oxidized or rendered inert, and no general effects are produced. It necessarily follows from these facts that adrenalin intravenously injected is contraindicated in internal hemorrhage and that hypodermically applied it is ineffective. Its effects, however, are quite marvelous whenever the drug can be brought directly in contact with the bleeding part, for here its vaso-constriction is so powerful as to obliterate the lumen of the vessels. If adrenalin could be brought in contact with the bleeding vessels at the bleeding point the question of internal hemostasis would be solved. It is probably impossible that this can ever be done in all cases; in some, however, the possibilities seem to be good. It can be easily introduced into the stomach in hematemesis and is the most efficient drug now known. In severe typhoid hemorrhage a surgeon might be able to introduce it after laparotomy under local anesthesia. Perhaps some method can be devised to introduce it through the ileo-cecal valve by means of a special apparatus.

The action of ergot is a complex one, being compounded of three factors—one a sapotoxin action, second, a convulsive action due to cornutin, and third, a vaso-constrictive action due to spascelotoxin. The vaso-constriction may actually lead to gangrene, as can be readily seen in the cock's comb. This action is due to a prolonged and complete constriction of the arterioles shutting off the blood supply and leading to hyalin formation in the lumina which obstructs the vessel, even after the vaso-constriction has disappeared. The vaso-constriction, which is due partly to central but mainly to peripheral action, is not entirely general and consequently the blood pressure is raised, but in a moderate degree. This spascelotoxin action is very marked on the unstriated muscle fiber of the uterus, leading to contractions of this organ

which resemble the normal peristalsis, in small doses, but may become tetanic when the amount used is large. The efficacy of ergot, therefore, in *post partum* hemorrhage is due to the uterine contractions which it induces, closing the lumen of the vessels. In all forms of internal hemorrhage ergot has been and is much employed. It is used in the belief that it contracts the vessel walls and stops bleeding. Internal hemorrhages cease so often spontaneously that it is difficult to judge how far the drug action has contributed to the result. The physiological action of ergot indicates that a vaso-constriction occurs after its use, but this vaso-constriction does not involve the general vessels, for there is no great increase in blood pressure. Only certain territories are involved in the action, and it is quite impossible to exactly define their location. The bleeding vessel may or may not be constricted. The exact extent to which ergot raises the general blood pressure is not known. By some it has been found to be considerable, by others not so marked. Strange to say, the blood pressure has not been examined in the fowl where the typical ergot action is so readily elicited. At any rate, ergot is not open to quite the same objections on this score as digitalis, hydrastis and strychnin. As a hemostatic, therefore, ergot is, to say the least, uncertain. Its action on the uterine muscle is the only typical effect which may be produced with certainty, so far as we know.

The astringent drugs employed for controlling hemorrhage are two in number, the tannins and salts of heavy metals. Tannic acid locally applied to animal tissue causes a precipitation of the proteids. The density of the precipitates is directly proportional to the concentration of the solution. In the stomach the combination of proteids and acid occurs, but is eventually broken up as digestion proceeds, since the peptones do not combine with tannic acid in acid solution. The astringent action may, however, be exerted upon the walls of the stomach and intestine. Formerly it was claimed that tannic acid produces a constriction of the bloodvessels when locally applied, but while this is true with very weak dilutions, more concentrated solutions after a transient constriction are followed by dilation. Tannic acid will precipitate blood in the test tube and produce embolism when intravenously injected. When taken internally tannic acid is converted for the most part into gallic acid in the intestines. This is absorbed, a

gallate, and so circulates in a nonastringent form in the blood, finally undergoing complete oxidation. These facts show that the tannin can be of no service in internal hemorrhage if the effects are desired after its absorption. Its effects are limited to the point of application as is the case with adrenalin.

It is not necessary to enter into any detailed description of the astringent or hemostatic effects of the heavy metal salts; here also the local action is due to the formation of proteid combinations. These combinations are, however, much more intimate than they are in the case of tannic acid. When a solution of metallic salts is applied to living tissue an albuminate is at once formed. The acid is set free. The activity of this process depends on the dissociability of the ions in the metallic salts. Other factors besides dissociability determine the character of the local action, such as the activity of the metallic ion and the nature of its acid complement. The salts of heavy metals are absorbed with great slowness and only in the most minute quantity. They can act only at the point of application, and therefore the salts of lead and iron which are so often given for hemorrhage in the lungs, kidneys and other organs are ineffective.

A few years ago every case of hemorrhage, internal or external, if at all severe, was treated by large quantities of so-called isotonic salt injected hypodermically, intravenously, or *per rectum*. Several modifications have very properly been made in the method. In the first place, the so-called isotonia of 6-10 per cent. solutions was found to be a myth, 7-10, 8-10, or even 9-10 being required. In the second place, the quantity used has been materially reduced to the great benefit of those subjected to the treatment. Thus modified the method has been found well adapted to produce an amelioration of the circulatory conditions after loss of considerable quantities of blood. It was quite wrongfully deduced from this that the solution stimulated the heart directly, and this led to the extension of the treatment to conditions where it could but fail to benefit—cardiac, adynamias, cholera, etc. Even with respect to the salt infusion in cases of hemorrhage, there is at the present day no unanimity of opinion. The latest investigator of the question, Feis, concluded that it is of little or no benefit. Biernacke showed that animals do not recover from the effects of such injections for a week, the blood being first very much diluted, and subsequently very much concentrated as

as a result of which erythrocytolysis and hemoglobinuria occur. The present opinion seems to be against the indiscriminate use of the method ; of course, its hemostatic power is zero, and the only function it can fulfil is to replace in a limited degree the bulk of the body fluid. Two hundred and fifty cc. is the maximum quantity which should be administered at a time.

Opium is not a hemostatic and yet it is very effective in many forms of internal hemorrhage. In fact, in all cases of severe internal bleeding, except cerebral, where the bleeding point cannot be reached, opium is a most, and perhaps the most, valuable drug we possess. This is not because opium or its chief alkaloid, morphin, has any direct effect upon the blood or the bloodvessels, but because of its truly remarkable power of depressing the cerebral functions and allaying the restlessness which always accompanies the loss of blood. Small doses only should be used in order to avoid the central vaso-motor stimulation with consequent rise in blood pressure.

Although there is no doubt that a lowering of the blood pressure is one of the physiological factors in the spontaneous arrest of hemorrhage, the application of vaso-dilator drugs to this end has so far been extremely limited. The only drugs which are able to produce marked and rapid lowering of blood pressure are the nitrites. The characteristic results of the absorption of these drugs are dilatation of the vessels and the formation of methemoglobin. The vascular dilation is accompanied by a profound fall of blood pressure and is due to depression of the nerve ends and muscles of the arterioles, and affects the vessels of the abdomen and head more than those of the extremities. There is also an acceleration of the pulse induced by the nitrites, particularly amyl nitrite, due to the depression of the vagus center in the medulla. The effect of nitrite of amyl inhalations on coagulation time would be useful information, but so far we have not been able to find any information on this point. The consideration of the action of the nitrites, particularly nitroglycerin, would seem to indicate that in small doses they would act beneficially in hemorrhage. Clinical evidence is wanting in this particular, but the favorable action of the nitrites in hemoptysis is acknowledged by the majority of observers. Their introduction for this purpose constitutes a real advance in the treatment of pulmonary hemorrhage.

It is scarcely necessary for me to pursue any farther this somewhat iconoclastic review of the treatment of internal hemorrhage. It is certainly not a matter for congratulation that among all the methods in vogue for treating internal bleeding so few are of any value and that in the presence of many hemorrhages the patient must go to his death without any material help from either surgery or medicine. We should, however, at least be very certain before presuming to intervene in the presence of this supreme struggle, that our efforts shall be devoid of any harm. Given a multitude of soft corpuscles floating in a thin liquid, the evolutionary problem was to provoke its solidification on injury of the vessel wall so that the open space might be filled up. A fine mesh of fibrin suddenly forming and enclosing the corpuscles was the natural solution of the problem, and exactly this occurred. Up to the present no sure method has been discovered of accelerating this wonderful mechanism nor of remedying its defects when they occur.

Dr. Carr congratulated Dr. Barton upon the presentation of an excellent paper, and also upon the opinions he had expressed with regard to many drugs. There could be no doubt that in internal hemorrhage, drugs which raise the blood pressure do harm. The most reliable drug for such conditions is opium, and that drug had been endorsed by the essayist. In some cases local anemia may be produced at the bleeding point by getting the blood into other regions. For instance, much can be done to check cerebral hemorrhage by diverting the blood to the abdomen, this being the most effectual means at our command. The blood-vessels in the abdomen are so large and so numerous that they can hold nearly all the blood in the body; he had seen profuse intractable nose-bleed stop almost immediately after the administration of a brisk purgative.

Dr. Harrington said that Dr. Barton's experiments with adrenalin administered hypodermically had been made on normal individuals; would not the use of adrenalin hypodermically produce a rise of blood pressure in cases where the blood pressure had been lowered from shock, hemorrhage or paralysis of vaso-motor centers? In other words, would not a pathologically low blood pressure be brought nearly or quite to normal by the hypodermic use of adrenalin chloride?

Dr. Williams said that the paper had been most destructive to the vanity of many pharmaceutical hopes, and had been pessimistic with regard to the ability of the surgeon to help in many instances. Whether the surgeon may help or not depends largely

upon the accuracy of diagnosis. In cerebral hemorrhage the blood pressure rises with the increase of hemorrhage, a compensatory measure perhaps to provide for an adequate supply of blood to the vital centers; at any rate a vicious circle is thus established, but a circle that has the redeeming feature that it affords a diagnostic clue, viz: the choked disc. As this sign presents very early in intracranial hemorrhage, a more frequent search for it may give the surgeon ampler opportunities to help in such cases and the situation may to that extent be improved.

Dr. Nichols had followed the literature with regard to the hemostatic use of calcium with considerable care, and he had found that many good observers have exactly opposite views upon the subject. He thought that the weight of authority on the two sides was about equal; certainly it seemed to him that the question was still open for solution. He had seen some apparent good effect from the administration of calcium.

As to gelatin, he thought he had observed some good effects from it in a few cases, where it could be applied rather near the seat of bleeding and late in the attack after the loss of much blood. He was not yet prepared to abandon all faith in it.

Dr. Lochboehler said that his search of the literature had shown that opinion is rather favorable to the use of gelatin in dysentery cases attended with hemorrhage. More recently writers have been devoting their attention to the action of lactic acid (sour milk) in intestinal hemorrhage.

Dr. Roy thought that he had seen some good effects from the use of lactate of calcium in hemorrhage, notwithstanding Dr. Barton's statement that the drug passes through the bowel entirely unchanged and unabsorbed. It seemed to Dr. Roy that exceedingly careful laboratory investigation would have to be made in order to say that every particle of calcium lactate is excreted unchanged.

Dr. Prentiss Willson said that the high regard in which Dr. Barton held the vaso-dilators in the therapeutics of internal hemorrhage led him to make the suggestion that some snake venoms might prove to be of value in this connection. The crotaline venoms especially had marked vaso-dilator properties, killing, usually, through the extreme fall in blood pressure produced. Flexner and Noguchi had shown that the toxic properties of a venom for particular tissues might be removed by treating the venom with an emulsion of the tissue, leaving the other toxic properties intact. At any rate, the question would seem to be worth investigation.

Dr. Barton had little to add. He adhered to the position indicated by the paper; he wished to point out that many of the opinions expressed were not his own, however, as the paper only endeavored to set forth what the literature holds upon the subject. As to the experiments with adrenalin, there can be no doubt that

the effect of pyrocatechin is purely local; when 10 cc. of a 1-1000 solution of adrenalin chlorid are injected in one arm there is no rise in the blood pressure in the other arm. If Dr. Harrington had any doubt in the matter, he might try the experiment, as it was easy to make and perfectly harmless.

A PARTIAL REVIEW OF INTERNAL MEDICINE.*

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During the past year interest in tuberculosis, especially with reference to diagnosis and prevention, has been greater than ever before. The International Tuberculosis Congress, in session in this city September 28 to October 3, 1908, was one of the notable gatherings of the world. There were present official delegates from thirty-three nations and a total registration of over six thousand members. Almost without a dissenting voice the talk was of decreasing death rates, of plans for multiplying sanatoria and of the need of further educating the laity with a view to securing more intelligent coöperation and influencing more and more generous contributions to carry on the fight.

The value of sanatoria for the segregation and treatment of tuberculous patients is quite generally recognized and is twofold: (1) From a standpoint of *cure*, the prospect is better in a sanatorium than in the average home, because discipline in the all-important matters of food and hygiene can best be maintained; and (2) From a standpoint of *prevention*, segregation means removal of those infected from those who are noninfected.

The campaign of education has been steadily waged and already has borne abundant fruit. The average man and woman of today have an interest in tuberculosis and a knowledge of its cause, spread, prevention and cure which is striking as compared with the indifference and ignorance of the recent past. Even the children in our public schools talk of it and significantly use the words "communicable," "preventable," "curable" and like terms. Public opinion is coming to demand a proper disposition of tuberculosis sputum.

*Read before the Medical Society, January 27, 1909.

It has seemed to me that one of the greatest goods, if not the chief good, of the recent Congress has been to further arouse public interest, to extend the educational process already so well under way.

One of the many interesting features of the recent Congress was a discussion of the relation between human and bovine tuberculosis. The discussion was in reality a renewal of a discussion dating back to the London Congress in 1901. The contention of Robert Koch, easily the most conspicuous and commanding figure in both assemblages, was that primary tuberculosis involving the digestive tract is quite rare, and that while bovine infection occasionally occurs, it causes only a mild type of the disease, usually a mild infection of the lymph glands. Koch's contention was strenuously opposed in many quarters, notably by Calmette, who believes that the usual route of infection is through the digestive tract. Calmette believes in the unity of the human and bovine bacilli. According to his belief, bovine bacilli can pass from the alimentary canal to the lymph glands where, undergoing a morphological change, they assume the human type, in which form they pass to the lungs or other organs and infect them. Koch does not deny the *possibility* of bovine infection in human beings, but insists upon its rarity and non-importance as compared with infection from human sources. He points to the fact that only two or three cases have been recorded in which there have been found in the bodies of those dead of tuberculosis, bacilli of the bovine type unmixed with those of the human type. The consensus of opinion was that the two types of bacilli, contrary to Calmette's view, are quite distinct, and, in part contrary to Koch's view, that infection with both forms is frequent and that either is capable of causing severe infection in man. Although Koch stood nearly or quite alone, the Congress very properly paid him the high tribute of refusing to pass a resolution as to the necessity for controlling bovine tuberculosis in the interest of public health, on the ground that the matter was a scientific question still under dispute and in need of further study, and could not properly be disposed of by resolution.

In this connection it is of interest to recall that in 1901, shortly after an expression of Koch's views at the London Congress, de Schweinitz and Schroeder, of the Bureau of Animal Industry, made some interesting experiments in which they showed (1)

that monkeys are very susceptible to bovine tuberculosis, dying a few weeks after inoculation, of generalized infection; (2) that tuberculosis cattle react equally to human and bovine tuberculin. They believed that man is quite as susceptible to bovine tubercle bacilli as to human tubercle bacilli.

The importance of an early diagnosis of tuberculosis has led to much work with a view to facilitating its early recognition. Two newer methods of using tuberculin for diagnostic purposes are its instillation in suspension into the eye, and its inoculation into the skin, each giving a more or less characteristic local reaction.

The preparation advised by Calmette for the eye test is a *fresh* one per cent. glycerine-free suspension of tuberculin in sterilized distilled water; of this one drop is to be instilled into the conjunctival sac. The reaction, as described by him, is a slight swelling and redness involving chiefly the caruncle, inner canthus and conjunctiva. It is essentially a conjunctival inflammation. The reaction usually reaches its height in from eight to fourteen hours, and by the end of the third or fourth day has in a large measure subsided.

Various objections have been urged against this test. The most important of these are: (1) That the reaction does not always occur in tuberculous subjects; (2) That it may occur in subjects who have not tuberculosis; and (3) That the reaction is not always mild, of short duration and harmless, as just described. These objections are, in a measure, all valid.

That the reaction does not always occur in those who are tuberculous seems certain. It is said to fail very frequently in advanced tuberculosis with marked anemia and greatly reduced vitality; also in generalized tuberculosis; also in children under two years old.

That it may occur in subjects who have not tuberculosis is also seemingly true.

That the reaction is not always mild and harmless is also true. A considerable number of cases has been reported in which the reaction was violent and the duration extended over weeks or even months.

If the test is negative, it should be repeated after from seven to ten days, and the instillation should be into the other eye.

The test should not be used in an eye which is not in a normal state.

Tuberculin tablets properly prepared are to be had of such strength that one to 1 cc. sterile water, or, preferably, normal salt solution, makes the required 1 per cent. suspension.

From a limited personal experience and a review of the rather extensive literature, the following conclusions seem to be justified:

1. Usually, but not always, tuberculous subjects will give a positive reaction to Calmette's test.

2. Usually, but not always, in non-tuberculous subjects the test will be negative.

3. Usually the reaction is mild, of short duration and harmless, but not always so.

4. In some cases the test may be an aid to diagnosis, but is not to be used as a matter of routine.

The skin test of von Pirquet consists of a local reaction to a small amount of Koch's old tuberculin inoculated into the skin. A typical reaction consists of a hyperemic induration about 1 cm. in diameter with a deeper colored central depression at the site of inoculation. The reaction is at its height in from twenty to twenty-four hours. It gradually subsides, and has disappeared in from one to four weeks. No constitutional symptoms occur. Subjectively there may be some itching and tenderness. A convenient site for the inoculation is on the inner aspect of the forearm, and it is to be done with the same regard for cleanliness as an ordinary vaccination.

The percentage of positive reactions is greatest in recent or only moderately advanced cases (80 per cent., 90 per cent.) and smallest in very advanced cases with lowered reaction (30 per cent., 40 per cent.), (Lincoln, *Jour. Amer. Med. Assoc.*, November 21, 1908.) Frequently there is a reaction in non-tuberculous subjects, which circumstance seriously detracts from the value of the test. A positive reaction cannot be accepted as conclusive of tuberculosis; in suspected early cases a failure of reaction is good evidence of the nonexistence of tuberculosis. A distinct advantage of the skin test as compared with the subcutaneous injection of tuberculin, is that the presence of fever does not obscure a proper interpretation. No ill effect has been reported from the von Pirquet test, and, bearing in mind its limitations, it is to be looked upon as a diagnostic measure worthy of trial.

Detre, of Buda-Pesth, has attempted to make a differential diagnosis as between human and bovine infections by the character of

the reaction resulting from simultaneous skin inoculations with human and bovine tuberculin.

Excepting tuberculosis and pneumonia, no disease has contributed with more sickening regularity to the morbidity and mortality of the world than *typhoid fever*, and it, like tuberculosis, has continued to receive much earnest, thoughtful attention.

There are some important and comparatively new features of which a review of medical progress must take cognizance.

The points which I wish to discuss briefly are :

1. *The character of the infection*.—Our conception of the disease pathologically is very much changed. The belief that it is primarily an infection of the intestinal tract, spreading thence to the blood where the organisms multiply—to be distributed to the various organs and tissues of the body—is no longer held. It is now believed that typhoid organisms, taken in through the digestive tract in milk, water, or otherwise, first find a soil for their growth in the lymphoid structures of the body, *i. e.*, that typhoid fever is primarily a disease of the lymphoid tissues. It is believed that the organisms often lodge first in the tonsils, thence, passing downward, find their way to collections of lymphoid tissue in the gut, thence through the lymph channels to the mesenteric glands, and to the spleen, liver, bone-marrow, and wherever there is lymphoid tissue. In these localities they multiply and from such foci overflow into the blood. They do not multiply in the blood—the blood condition is a bacteremia and not a septicemia. From the blood they are excreted in various directions, *e. g.*, into the bile, urine, bronchial secretion, saliva, etc. They find their way into the intestinal canal partly through the bile and partly from the infected Peyer's patches and solitary glands. The intestinal wall (except the lymphoid tissue) and contents are not a good culture medium. The gall-bladder and its contained bile are a specially favorable breeding ground. At autopsy the bile may be found so abundantly infected that a single drop planted on a suitable medium will give thousands of colonies, while cultures from the intestinal contents (below the ileocecal junction) may not show a single colony (Peabody, *Jour. Amer. Med. Assoc.*, September 19, 1908, p. 979). Under such conditions organisms poured into the intestine in the bile current evidently have not long survived, though if they be abundant and have good resistance, they may survive and be passed out in the feces. According to Pea-

body (*loc. cit.*) it is probable that some typhoid bacilli are much more resistant to the hostile conditions in the intestine than others. These considerations tend to explain the fact that bacteriological study of typhoid stools is notoriously uncertain. In many examinations the organisms are found not at all or with difficulty; in other cases they are found abundantly, but only intermittently. They are not often found in the stools in the first week.

2. *The contagiousness of typhoid fever.*—That typhoid fever is contagious needs to be constantly emphasized in order that the public may be taught to realize that a case of typhoid fever is a menace to others. Not only is immediate disinfection of stools, urine, soiled linen, etc., necessary, but personal cleanliness and disinfection on the part of those who come in contact with typhoid cases are imperative. The question of contact is very important. The percentage of cases among orderlies and nurses who care for typhoid patients is large. The Typhoid Board found 7 per cent. of cases in the District of Columbia, studied in 1906, and 19 per cent. in 1907, due to contact, as compared with 11 per cent. and 9 per cent., respectively, due to infected milk. It is probable that not more than one-half the contact cases were traced. More striking illustrations of spread by contact occur in camp life. Our Spanish War Commission (Reed, Vaughan and Shakespeare) showed that of 1608 cases studied in the army, not less than 62.8 per cent. were contact cases.

In 1900 Koch made a most instructive report of an epidemic investigated by him in the neighborhood of Treves. There were seventy-two cases and in every case the spread was by contact. The cases in any house formed a distinct chain. Given one case, in two or three weeks a second would develop, and after a few weeks more, another, and so on. A striking feature of this epidemic was that of the seventy-two patients fifty-two were children, and that among them the disease was for the most part exceedingly mild—only eight cases had been reported. Koch therefore emphasizes the importance of spread by contact and especially the danger from mild cases which but for the great care would go unrecognized. Conradi has insisted with great emphasis upon the frequency of early contact infection, before the disease is clinically recognizable, even during incubation, and has urged the necessity for an early diagnosis and the earlier institution of measures to prevent spread by contact.

3. *The desirability of early diagnosis and the best method.*—Inasmuch as the disease is communicable by contact and otherwise very early, even during the stage of incubation (Conradi), and also because early recognition insures to the patient the early rest and dietetic restrictions which are so essential, early diagnosis is very desirable.

Study of the stools for the purpose of early diagnosis is of very little value.

From bacteriological study of the blood the diagnosis can be made earlier than in any other way and is conclusive. Brion and Kayser, working at Strasburg, have found that typhoid organisms can be cultivated from the blood during the first week (counting from the commencement of fever?) in 100 per cent. of cases. They may even be grown in the first half of the first week. After the first week they cannot be grown so constantly, and in each succeeding week they are found with diminishing frequency. Thus in the second week they may be cultivated in 58 per cent. of cases; from the third to the fifth week in 40 per cent.; after the fifth week still less frequently. The best culture medium is sterile ox-bile. Bile is an "enriching" medium. By the term "enriching medium" is meant a medium which favors the growth of colonies of typhoid bacilli while it inhibits the growth of other organisms. From 1 to 2.5 cc. of blood is mixed with 5 cc. sterilized bile and incubated for twelve hours. From this culture a small amount is plated on suitable material. There are several suitable plating media, among them Conradi's "brilliant green" (an aniline dye), to which picric acid has been added in proper proportion, and Endo's mixture of fuchsin and sulphide of soda. Within from twelve to twenty-four hours the color and structure of the typhoid colonies make them recognizable, with a fair degree of certainty, with the unaided eye. To make the identification of the organisms conclusive one or more colonies are then subjected to the test of agglutination by adding under an ordinary magnifying glass or a microscope the immune serum of a rabbit. This last procedure is a matter of but a few moments. Agglutination, properly controlled, is positive identification. The quantity of the patient's blood required is small, 1 to 2.5 cc. It can be drawn almost painlessly through a needle introduced into a vein near the elbow. The bacteriological technique is very simple and requires no unusual or expert know-

ledge. The total time consumed is from twenty-four to thirty-six hours. The diagnosis can always be made by this means before a Widal reaction is obtainable—in some cases as early as the first or second day of fever. Diagnosis by blood culture as here described is the most notable advance in the early recognition of the disease.

4. *Chronic bacillus excretors*.—It has long been known that some typhoid patients continue to excrete organisms for varying lengths of time after recovery from typhoid fever. Of late this group has come to be recognized as important for the reason that they may be responsible for outbreaks of the disease. There have been many outbreaks of obscure origin for which bacillus carriers and chronic excretors were doubtless responsible.

Any case which excretes organisms after the tenth week is regarded as a chronic excreter. It is estimated that from 1 per cent. to 5 per cent. of cases become chronic excretors. An individual may become a bacillus carrier without himself having had typhoid fever, as where organisms enter the body through the digestive tract from infected milk, by contact, or otherwise, lodge in the intestine and there thrive in its contents—the patient, because of some inherent protective mechanism, not becoming infected. In chronic excretors the chief habitat of the organisms is probably the gallbladder and not the intestine.

Chronic excretors have not typhoid fever—their blood, as a rule, contains no antibodies and will not agglutinate a typhoid culture.

Recognition of carriers and chronic excretors rests upon a study of the stools and isolation of the organisms. The technique is not difficult. Some of the suspected stool is plated on Conradi's or Endo's medium, and incubated. The typhoid organisms and others of the same group, *e. g.*, colon bacilli, will grow, while the growth of other organisms is inhibited. The practical problem is to separate the typhoid from the colon colonies. A colony of either organism presents a more or less characteristic appearance to the naked eye. Thus on the pink Endo plate a typhoid colony, because of the small amount of acid produced, after from eighteen to twenty hours' growth, has a clear, colorless "dew-drop" appearance, while the colon colony, because of free acid production, is red. The identification of the typhoid organisms is made conclusive by the agglutination test—adding rabbit's immune se-

rum,—as in the case of typhoid colonies grown from blood. The stools examined should be fresh, for typhoid organisms do not live long in typhoid stools, and a number of examinations, at least three at weekly intervals, may be necessary.

Chronic excreters are a menace to public health and present a serious problem. Only recently an outbreak occurred in Georgetown which was traced to a chronic excreter engaged in the dairy business. To free a chronic excreter of the organisms is apt to be difficult and may be impossible. Measures which have been recommended are (1) large doses of urotropin, 75 grains in the 24 hours for several days or weeks—this plan has cured some cases; (2) the administration of mercury by inunction, as in syphilis—this plan has found favor especially in Germany; (3) opening and draining the gallbladder. Any of these plans is more apt to fail than not. During the past fall and present winter I have given to a series of eight cases of typhoid fever 40 grains of urotropin daily throughout the illness. Whether this plan will protect the gallbladder against invasion is a question of some interest. It is certain that urotropin is excreted in large part through the bile.

The urine as a source of elimination in chronic excreters has not been sufficiently studied.

5. *The prevention of typhoid fever by vaccination.*—This subject is not new, but is of special interest at the present moment. The work done has been chiefly in the English and German armies. More than ten years ago Wright attracted the attention of the scientific world by vaccinating 4,000 soldiers in India with dead typhoid organisms. During the Boer war 100,000 soldiers were vaccinated. Little is known of the results of these first efforts at the production of immunity. Since 1902 Leishman has done notable work along the same lines. He has vaccinated 7,000 soldiers with seemingly positive results. As his work has progressed and become more nearly perfected, the results have become more positive. A notable example of the seeming efficiency of vaccination is seen in the case of the Seventeenth Lancers at Meerut, India. The total strength of the regiment was 616 men. Of these 322 were inoculated, and among them there were but 3 cases of typhoid and no deaths. Among the remaining 294, who were not inoculated, there were 71 cases and 12 deaths. In the annals of vaccine immunity against typhoid the Seventeenth Lancers has

become famous. The vaccine is made according to Wright's usual plan. Typhoid organisms are incubated on broth for 48 hours, then killed by heat at 53 degrees C. and lysol added in sufficient quantity to act as a preservative. The initial dose of the vaccine is 500,000,000 organisms and the second dose twice that number.

Work in vaccine immunity in the German army was begun in 1904-'05. Among 16,496 soldiers, inoculated and uninoculated, 1904 to 1907, there were 1,277 cases of typhoid fever. In each uninoculated 1,000 there were 98.4 cases, with a mortality of 12.6; in each 1,000 inoculated there were 50.9 cases, with a mortality of 3.3. The vaccinations were much more efficient when three inoculations with increasing dosage were made than after a single dose. Thus taking groups of 1,000 men, among those receiving a single inoculation there were 63.1 cases, with 7.1 deaths; after two inoculations 48.1 cases, with 2.2 deaths; and after three inoculations 47.9 cases, with 1.3 deaths. Using the same data differently arranged: Among the uninoculated there was 1 death to every 7.8 cases; among the inoculated there was after one dose of the vaccine 1 death to every 8.9 cases; after two doses 1 death to every 21.9 cases, and after three doses 1 death to 36.1 cases.

The vaccine in use by the German investigators is prepared after the manner of Kolle and Pfeiffer, by killing with heat at 60 degrees C. organisms grown on agar. Organisms selected for cultivation are those which after being tested are found to have the maximum capacity for producing antibodies—bacteriolytic amboceptors and agglutinins. Non-virulent organisms best meet the requirements. The first dose is one-tenth of a standard agar culture, the second is twice the first and the third three times the first.

There is local and general reaction to the inoculations. The general reaction begins in from four to six hours and lasts forty-eight hours and consists of fever, headache, general malaise and sometimes albuminuria.

Since writing the above paragraphs the latest results obtained in the British army in India have come into my possession through the courtesy of Dr. Frederick F. Russell, U. S. A., and are tremendously impressive. Leishman's figures, as yet unpublished, show that among 7,000 soldiers inoculated the incidence

and mortality are as 1 to 10, as compared with the incidence and mortality among those not inoculated!

An additional interest is given to this subject by the fact that on December 7, 1908, a Board of army officers, consisting of Vaughan, Musser, Thayer, Flexner, Lambert, Councilman, O'Reilly and Russell was appointed by the Secretary of War to consider the subject of vaccine immunity in relation to our own army.

6. *Some brief general considerations and conclusions.*—The conveyance of typhoid fever by contaminated water and infected milk has been in the past and is at present a matter of the greatest moment. The subject of pure water and milk supplies cannot receive too much attention; the important subjects of spread by contact and early diagnosis are receiving too little attention. The diagnosis from blood cultures can always be made during the first week and sometimes as early as the first or second day. If more *early* and *late* attention were given to the real source of infection, namely, the excretions of the patient, dissemination of infectious material could be better controlled—bad water and milk supplies would be less frequent. If all cases were diagnosed as promptly as is possible; if in all recognized and suspected cases disinfection of stools, urine, soiled linen, etc., were practiced from the commencement of observation; if all cases and suspected cases were isolated to the extent of preventing unnecessary contact; if those who come into contact with the disease were sufficiently careful in the matter of personal cleanliness and disinfection, the typhoid fever problem would in a large part be solved. Contaminated soil, rivers, wells, springs, etc., would take care of themselves, for the typhoid bacillus is an obligatory parasite for man, and cannot live long outside the human body. The nearer we approach these ideal but at present impossible conditions, the less typhoid fever there will be. Chronic bacillus excreters are a public menace and should be sought for more frequently—it is good practice to make in every case a series of examinations of post-typhoid stools. In obscure outbreaks there is always the possibility that a chronic excreter is responsible. Vaccine immunity is a very promising field, not only in military but in civil practice. Vaccination against typhoid infection may become as effective and as general as vaccination for the prevention of smallpox.

Since the discovery of the specific cause of *syphilis*, industrious and painstaking efforts have been made to work out a serum reaction by which syphilis could be positively diagnosed. The work has been done chiefly in foreign laboratories and hospitals, and among the names connected with its development and use are those of Wasserman, Bordet and Gengon, Porges and Meier, Levadita and Klausner. In this country William J. Butler, of Chicago, has made careful laboratory and clinical studies.

That luetic serum gives a specific reaction seems positive. At the present time a very complex laboratory technique is necessary to obtain it and the services of a trained pathologist are required.

A carefully prepared paper was read by Dr. Butler before the Section of Pathology and Physiology at the meeting of the American Medical Association in Chicago in June, 1908, in which the history of the subject to date was reviewed. His conclusions were, in the main, as follows :

1. The serum reaction of syphilis is specific.
2. It is found positive in from 90 per cent. to 95 per cent. of all cases with syphilitic manifestations.
3. It is found positive in 50 to 60 per cent. of latent cases.
4. It is found positive in from 70 to 80 per cent. of para-syphilitic diseases.
5. A positive reaction indicates activity of the specific virus and is an indication for antisyphilitic treatment.
6. The reaction will be found of enormous advantage in differential diagnosis in every department of medicine.

No disease is easier to diagnose than syphilis and none is more difficult. In view of the great difficulty of diagnosis in many cases and of the obvious necessity for eliminating doubt, a specific serum reaction, if it can be brought to a point of practical utility, will be warmly welcomed.

Rational therapeutics has continued to receive earnest consideration, and to pathologists and experimental physiologists we owe an increasing debt of gratitude. Medicine owes much to empiricism. In years not very long gone the basis of therapeutics was largely empirical, and certainly some of our most effective therapeutic practices are of empirical origin, *e. g.*, vaccination to prevent smallpox and the use of quinine in malarial infections. The recognition of *vis medicatrix naturae* is very old. It has

long been recognized that the animal mechanism is endowed to a remarkable degree with power of automatic self-repair, thus differing essentially from any machine made by human hands. So efficient are the processes of self-repair that the natural tendency in a majority of diseases is to get well without treatment. A common knowledge of this fact has even in the very recent past been largely responsible for therapeutic pessimism. Too many clinicians have contented themselves with a study of pathology and diagnosis, largely to the neglect of therapeutics. Therapeutics is the most important part of the practice of medicine. The very object of pathology and of skill in diagnosis is in the main to point the way to the most efficient therapy. Pathologists and physiologists are giving much study to the therapeutic processes of nature, with the result that the internist of today in the case of many diseases can no longer be content to leave the process of cure solely or so largely to Nature's unaided care. Many of Nature's secrets have been laid bare, and with a knowledge of her *modus operandi*, in the case of many and an increasing number of infections, we have learned to work hand in hand with her, supplementing her efforts at cure, making recovery more certain and shortening the duration of disease. The animal mechanism automatically defensively reacts to bacterial invasion in various ways: "The reaction may be local or general, or both, and it may be in the nature of an increase of the normal forces, or a change in the distribution of forces, or a call upon the reserve or latent forces, or finally, the reaction may consist in the creation of entirely new forces." Among the known defensive creations of which the animal organism is capable are the antitoxins, bacteriolytins, agglutinins, precipitins, anti-endotoxins and coagulins. The discovery of these natural therapeutic agencies has been of inestimable value, in that we have been put in a position to work with nature along her own lines, often making her defensive struggles succeed when without aid they could not succeed; and in that a knowledge of the same processes has pointed the way for the production of positive immunity against certain deadly infections. Among the latest therapeutic achievements based upon the process of self-repair is the discovery by Flexner of his antimenigitis serum.

In the *American Journal of the Medical Sciences* for July, 1908, is a short but exceedingly interesting article on "The Therapeu-

tics of Self-Repair," by S. J. Meltzer, of the Department of Physiology and Pharmacology of the Rockefeller Institute for Medical Research, in which the substance of the preceding paragraphs is discussed.

There can be but little doubt that with the lapse of time rational therapeutics will become better and better established, crowding empiricism, which has served its purpose, still further to the background; and the present outlook is that, so far as the immediate future is concerned, greatest progress will be based upon further studies of the defensive processes of the animal organism.

The curative value of Flexner's serum is established. Flexner and Jobling have recently (*Jour. Amer. Med. Assoc.*, July 25, 1908) analyzed 400 cases collected from many sources in which the serum was used. Cases which were moribund or in such desperate condition that the first injection was not survived for 24 hours were excluded. In 393 cases there were 75 per cent. of recoveries and 25 per cent. of deaths, about an exact reversal of the average percentages of recoveries and deaths prior to the use of the serum. The advantage of the early use of the serum is very striking; in cases in which its use was begun from the first to the third day the mortality was only 14.9 per cent., while in cases in which it was not used until after the seventh day the death rate was 36.4 per cent. The best results were obtained in patients between five and ten years of age. In them the mortality was only 11.4 per cent.

Curative vaccine therapy, in contradistinction to vaccines for the production of immunity, also has an established place, but it has not measured up to the promises of Wright and his disciples. It is yielding results in some local infections and in some chronic general infections. Determination of the opsonic index as a guide is regarded for the most part as unessential. The process of determining the opsonic index is very time-consuming, and indices obtained by different men under identical conditions are said to be very variable. In a discussion before this Society, November 21, 1906, I said substantially that vaccines would probably play a more important rôle of prevention than of cure; that to give a vaccine in a case of chronic local or general infection with lowered power of reaction on the part of the defensive mechanism seemed rational; and that to introduce pathogenic

bacteria, though dead, into the body of a person with an acute general infection, when perhaps there was already a toxemia which threatened to be overwhelming, seemed the reverse of rational. The subject was much newer then than now and had not been maturely considered, but I have seen no good reason for changing my earliest impression.

I beg to acknowledge my indebtedness to Dr. F. F. Russell, Major, U. S. A., and Curator of the Army Medical Museum, for data in reference to typhoid fever, especially for facts and figures in connection with the use of vaccines.

Dr. Russell had listened to the paper with interest and pleasure. He had been especially glad to hear contact typhoid fever called contagious; many persons have very vague ideas with regard to this matter. If we call it contact infection, our attitude toward the public is different from that implied by calling it frankly a contagious disease; while that term might not be entirely accurate, still the disease must be handled like a contagious disease, and might as well be so termed. One of the greatest difficulties in stamping out typhoid fever, and the remark was particularly applicable to armies, arises from the long incubation of the disease; another was the difficulty of early diagnosis. While the Widal reaction is of distinct value, it becomes apparent too late for prophylactic purposes. Diagnosis by blood cultures promises to be of very material aid, because the organisms may often be recovered in the first week; the technic of making the cultures, moreover, has been very much simplified, and the blood required may be easily obtained, and not much of it is needed. He deprecated the prevalence of the habit of submitting blood in the form of dried drops for determination of the Widal reaction; the fluid blood may be very easily collected in vials, and not only can the dilution be accurately measured when the blood is in this form, but the clot may be placed in a culture medium and the blood culture test made, with a fair degree of accuracy; cultures made in this way will prove positive in about half the cases.

At the other end of the disease, the recognition that bacillus excretors exist is most important; and recognition must be extended to the fact that not only convalescent patients but also nurses and attendants may be guilty. It is not necessary that an individual have typhoid fever to enable him both to harbor and excrete virulent typhoid bacilli. With this recognition we are coming to occupy about the same position with regard to this disease as we have long held toward diphtheria; convalescents must be watched. It is fortunate that simplified methods for the examination of excreta have been devised.

Dr. Wood congratulated the Society and himself upon having

heard the paper. He thought the public ought to be educated upon the typhoid bacillus carrier question. The recent epidemic in Georgetown had been traced to such an origin, but the ignorance of the public and even of the profession upon the question was very dense, and much incredulity as to the possibility of the spread of typhoid in this way was manifest. The Society in his opinion ought to take the matter up, and secure such legislation as might be required to control chronic bacillus excretors to the extent necessary to protect the public.

As to the treatment of this condition, inasmuch as the gall-bladder is the nidus of infection, other treatment proving inefficient, why not extirpate the gallbladder and thus cut off the source of pollution?

Dr. Lochboehler said that the incidence of typhoid in pregnancy had not been mentioned. It should be borne in mind that typhoid beginning at full term may be mistaken for sepsis. Early in pregnancy (before the sixth month) abortion takes place, usually without giving rise to any serious complication. He had been much interested to find in the literature statements to the effect that the blood of infants born during the course of typhoid fever does not give the Widal reaction, while the reaction may be marked with the mother's blood.

Dr. Ramsburgh was glad to hear the remarks upon the Calmette ophthalmo-reaction. There have been a number of serious results from its employment. The diagnostic uses of tuberculin by intunction and by inoculation are better and safer and so fulfill the conditions as to make the Calmette method unnecessary.

Dr. G. L. Magruder said that if the points emphasized by Dr. Ruffin were more generally heeded the prevalence of typhoid fever would be diminished. He had very properly laid stress on the contagiousness of the disease and on the influence of contaminated milk and water. These three points—contagiousness, contaminated milk and water—were the prominent causes of the disease as indicated in the report made to the Society by the Magruder committee in 1894. Among the recommendations then made was that the health officer should inspect the dairy farms, including the water supplies, before permitting the milk therefrom to be sold in Washington. Since then all speakers and writers have advocated the importance of these points. The *Hygienic Laboratory Bulletin*, No. 44, of May, 1908, states, page 9, "Thus far our studies indicate that typhoid fever will cease to be a 'problem' in any community having clean water, an uninfected milk supply and in which cases of the disease are treated as dangerous and contagious."

Dr. Magruder had been unable to find any record of systematic bacteriological examination of these dairy farms before 1906. Dr. Kinyoun in 1895 made six special examinations of suspected supplies; four of these were contaminated. In the fall of 1906,

at the request of Dr. Magruder, the Secretary of Agriculture had an examination made of water supplies of some dairy farms in this District and Maryland and Virginia, by Mr. Kellerman, sixty farms without selection; on 75 per cent. the water was virtually unfit for use and 50 per cent. actually. An examination of 290 more farms gave practically the same result. These results attracted wide attention. Dr. Evans, Health Officer of Chicago, had had an examination of 386 farms around Chicago with results very similar to those attained in this District. In 1908 the Agricultural Department co-operated with the Health Department of Minnesota; a marked epidemic was traced to the contaminated water on a dairy farm. Dr. Ravenel wrote to Dr. Magruder for information, stating that he did not know of any such investigations having been made before those of Kellerman. It is hoped that the Health Departments of other cities and States will adopt a uniform standard, in order that results may be readily compared. The one suggested by the Bureau of Plant Industry of the Department of Agriculture, the Water Purification Section, seems to be well suited to the purpose. No doubt much good will result from watching and protecting the water on dairy farms; experience has time and time again demonstrated the prevalence of loose hygienic practices, such as the throwing out of undisinfected excreta upon the local water shed, in barn yards, etc. Popular instruction is badly needed upon this subject. A frequent source of pollution of wells and springs arises from the fact that there is usually nothing to prevent water which has been spilt or thrown upon the ground in the vicinity from running back into the reservoir; impervious copings about wells and springs would do much to maintain their purity, because they would serve to divert surface water which has been contaminated by the boots of those working about the brink.

Dr. J. S. Neate, of the U. S. A. Laboratory, appreciated the invitation to speak, but the director of the laboratory in which he worked (Dr. Russell) had already covered the ground. Dr. Neate wished to direct attention to one point, namely, that the isolation of the typhoid bacillus from blood and excreta was not attended with the great difficulty which obtained under the old methods; by the new method the organism may be isolated with comparative ease by the trained laboratory worker. In listening to Dr. Ruffin's paper Dr. Neate had been struck by three items of scientific advance: Wasserman's serum reaction for syphilis; the diagnosis of bacillus carriers in cerebro-spinal meningitis; and the detection of chronic typhoid bacillus excretors. These laboratory methods of precision emphasized the growing importance of and necessity for trained laboratory workers; presently health departments will require bacteriologic evidence of the presence or absence of bacilli in these infections; who then will perform the necessary examinations to prove these points? The schools,

hospitals and profession at large should undoubtedly co-operate to supply the necessary training to fit men for this special line of work.

Dr. Acker had never used Calmette's ophthalmic test; he regarded it as too dangerous to be admissible. He had used von Pirquet's cutaneous test on a number of occasions and had found it very satisfactory. He had used it recently in two cases of meningitis, in which differentiation of the particular variety was difficult; the von Pirquet reaction was negative and Dr. Acker was able to exclude tubercular meningitis. Detre's test had not been mentioned. Dr. Acker had seen it demonstrated and it seemed to be successful in differentiating bovine infection from the human form. He believed that it had distinct elements of value.

As to typhoid bacillus carriers, nothing could be done to control them. Certainly hospital cases cannot be detained until excreta no longer contain typhoid bacilli; whether excreta contain the bacilli at all cannot even be determined in all cases; the hospitals have not the men necessary to conduct these examinations. And to control this situation among patients occurring in private practice would require a large corps of bacteriologists in the employ of the Health Department.

Dr. Macatee said that in view of the testimony presented as to the efficacy of typhoid vaccination in producing immunity to the disease, and in view of the striking effect of vaccination in Dr. Ruffin's case, in which the defensive processes had not been sufficiently developed to overcome the infection, it seemed interesting to suggest that bacterial vaccination with Eberth's bacillus might serve in some way to make the gallbladder inhospitable to the bacillus and thus cure chronic bacillus excreters.

Dr. Ruffin expressed his appreciation of the generous discussion of his paper. He agreed with Dr. Acker that von Pirquet's test is a valuable one, but thought that it had more negative diagnostic value than positive. He believed that after Dr. Acker has tried it on a large number of cases, he will find the reaction positive in cases with no tuberculosis, but seldom if ever absent if tuberculosis is present. He was sorry to hear Dr. Acker express such gloomy views upon the bacillus excreter question. It is true that we have no authority to control the situation at present, but we should as soon as possible get the authority. It is folly to disinfect typhoid stools all through the attack, and then discharge the convalescent still excreting bacilli where ever he goes. He agreed with Dr. Russell that typhoid fever should be subjected to the same restrictions as the strictly contagious diseases.

He did not believe that Dr. Macatee's suggestion to vaccinate bacillus carriers was founded on a correct conception of the condition; the carrier did not have typhoid fever, he did not have

the bacilli present in the blood; a specific inoculation for the purpose of increasing antityphoid blood elements would fail to reach the nidus of infection.

REVIEW IN PEDIATRICS FOR 1908.*

By EDGAR P. COPELAND, M. D.,

Washington, D. C.

A few years ago, on the occasion of the memorial meeting held by this Society for one of its most distinguished members, Dr. Osler, in lamenting the literary shortcomings of the deceased, said that "too much green fruit was brought to market." One cannot but be impressed by the truth of his remarks in any review of medical literature. To allude even briefly to all the subjects presented for consideration in the field of Pediatrics is obviously impossible. I will, therefore, crave your indulgence for only such time as will serve for brief reference to endeavors that have been or promise to be most productive.

Considerations of general prophylaxis broaden tremendously the scope of any consideration of the diseases of infancy and childhood, but, in proportion as they are successful, materially lighten the load in the treatment of disease.

It remained for Dr. Rotch, to whom we are already so greatly indebted for such knowledge concerning children as we possess, to clearly point the way to what may be termed an adequate standard of development. Dr. Rotch, from a large series of cases, by means of radiographs showing the progress of ossification in the bones of the wrist, has evolved an anatomic standard which would seem to correspond to the physiologic development, in sharp distinction to the chronologic standard, as shown by the strikingly different ages at which children erupt their teeth and attain puberty. This step is of far greater importance than appears at first glance, and should receive the careful consideration of those interested in educational and physical culture reform and the protection of child life.

Diseases of an infectious nature.—Easily taking front rank from

*Read before the Medical Society, February 10, 1909.

demic cerebro-spinal meningitis. This subject, not strictly a the standpoint of accomplishment is the work done upon epidemiatic one, holds perhaps greatest interest to the pediatrician, since through etiological factors in the affection they are given greatest opportunity in the application of treatment.

The development of this subject has been so ably presented to the Society on a previous occasion that only the importance of the disease justifies this reference. Flexner and his associates in the Rockefeller Institute have succeeded in producing a serum of undoubted therapeutic value in a condition in which we have been heretofore well-nigh helpless, a condition not alone of frightful mortality (Holt gives 75 per cent. in a review of 2,330 cases) but one in which recovery, with all its dire sequelae, is oftentimes even more unfortunate.

Perhaps it would not be amiss to briefly give Flexner's own description of the serum which bears his name. This serum belongs to the class of bacteriolytic sera and differs from the diphtheria, tetanus and dysentery sera in that it possesses little power to neutralize the toxic products of bacterial activity. In its preparation the organisms were grown and subjected to unfavorable conditions, when they underwent auto lysis, yielding an extra-cellular toxin, with which the immunization of horses was begun. Many months were required to accustom the animals to any considerable dose of the poison. After this immunization had been accomplished living organisms were employed to give the serum a bacteriolytic property. The end product was a serum of no great antitoxic value, but one which exerted a distinctly injurious effect upon the vitality and viability of the meningococci present in cerebro-spinal fluid.

In the reports showing the results of the use of the serum approximately 500 bacteriologically diagnosed cases come under consideration, showing about 25 per cent. of mortality. It is important to note that these have all been unselected cases, in many instances not coming under treatment until the third week of the disease, and further, that the remedy was in many cases used by those unskilled in such technique.

A valuable lesson learned from the earlier reports was the fact that the serum had been used in doses uniformly too small. A second point of great importance is the necessity for the early use of the agent.

The effect upon the duration and termination of the disease is interesting. In 220 cases the histories permitted a report on duration, showing an average illness of eleven days; 270 histories permitted a report on termination, showing it to be by lysis in 201, by crisis in 69.

The blood findings show in those cases responding to the serum a rapid and often critical fall in the leucocyte count, correlating with the disappearance of diplococci and clearing of the spinal exudate.

Later statistics would seem to bear out the early view expressed by Flexner, that in the vast majority of cases recovery from the disease, under serum therapy would be complete. It is rather more interesting than important to note the treatment of 17 cases of cerebro-spinal meningitis with the Kolle Wasserman serum by E. Levy, with 11.76 per cent. mortality. One case recovered following the intraspinal injection of vaccine prepared from meningococci.

Acute anterior poliomyelitis.—Another most serious disease involving the central nervous system has come in for a large share of attention. It has occurred with special frequency in certain sections of the country as to be correctly termed epidemic. Acute spinal infantile paralysis was epidemic in and around New York in the summer and fall of 1907 (some 2,000 cases) giving a splendid opportunity, as well as a decided stimulus, to the study of the affection. Nothing strikingly new has as yet arisen, but much of value has been brought forth which may lead to more exact knowledge in the near future.

The epidemic occurrence of the disease being apparent, its dependence upon an infection may safely be assumed. Holt and Bartlett found in 96 instances more than one case in the same house, the second case occurring after ten days in 37, after one week in 33, after twenty-four hours in 13, and concluded that the condition was communicable in a slight degree.

According to all observers, Koplik, Starr, Holt and others, general conditions, atmospheric and hygienic, were not materially different from previous years. The greatest number of cases occurred in the month of September. The greatest incidence of the disease was in children between 1 and 3 years of age (over 70 per cent., 95 per cent. being under 5 years). Shock, trauma and profound fatigue played a minor rôle, at most a predisposing

factor. Most of the children were in the best of health at the time of onset, without previous illness of moment.

As to the exciting cause, Harbitz and Scheel, of Christiania, Norway, have isolated from the spinal fluid in cases of infantile paralysis a bean-shaped, Gram positive diplococcus, virulent for animals in causing atrophy, paresis and death. Pasteur, Foulteron and Maccomac found, during life, a micrococcus in the spinal fluid. This organism in animals produced an ascending motor paralysis. A biological study of cerebro-spinal fluid obtained by lumbar puncture from 20 different cases, made at the Rockefeller Institute under the direction of Dr. Flexner, throws no light on the disease. It is interesting to note, in view of previously-mentioned work, that the fluid in 15 cases was sterile; in the remaining 5 the presence of organisms was noted, but they were regarded as contaminations. Dr. Flexner considers the findings to point to an acute microbic infection and the results to suggest toxic degeneration of the cord, due to toxin produced elsewhere in the body.

Whatever the infection is, the epidemic has abundantly proven that it finds the entire central nervous system and its coverings susceptible, the gray matter of the anterior horns merely being the most susceptible or the most perishable under its influence. The gray matter of the cortex, the bulb, and even the white matter may all be affected. The intensity of the affection of these parts rarely, however, goes beyond the stage of irritation. The number of cases in which the onset has been marked by gastro-intestinal disturbance would suggest a possible portal of entry for infection.

According to Starr, the symptoms of onset did not differ materially from those observed in previous epidemics. Vomiting and constipation were present in a large number. La Fetra in a study of 63 cases found the onset to be with vomiting in 25, constipation in 14, diarrhea in 17, pharyngitis in 6. Fever probably occurred in all, but was definite in 52 (average duration two or three days). In 37, restlessness and irritability were noted, delirium was present in 2, convulsions in 4, rigidity of the neck in 11, and pain and tenderness in the affected limb in 32. In 58 of the cases the paralysis was flaccid, in 5 spastic. Pain was a prominent symptom, in most cases referred to the muscles of the back, or to parts affected. Hyperesthesia was the rule. No defi-

nite or constant relation was observed between the degree or duration of fever and the severity or extent of paralysis. It was, however, made out that in all quadriplegias there had been a distinct febrile stage, whereas in the monoplegias a history of no fever was usually to be had.

The number of cases of cranial nerve involvement bears witness to the frequency of meningeal disease. Indeed the picture of meningitis in many cases was perfect. Somnolence, stupor, rigidity of the neck, retraction of the head, twitching of the face and extremities, sudden starting and screaming, and occasional convulsions were observed. Certainly time alone would develop a diagnosis with such an onset. Fortunately sporadic cases of such nature are seldom seen. The paralyzes observed in La Petra's series were, in the order of their frequency, one leg, both legs, one arm, quadriplegia, triplegia, contraplegia and both arms. Hernia was seen in some cases as a result of paralysis of abdominal muscles. These findings correspond very closely to those of Starr. He describes cases, presenting the picture of poliomyelitis of the ordinary recognized type, in others poliomyelitis with bulbar paralysis, and still others of poliomyelitis with encephalitis.

The prognosis as regards life and function proves to be a variable quantity, but was guarded while the disease was progressing, survival after the tenth day being regarded as favorable to life. Starr reports a mortality of 25 per cent., Holt 12 per cent., in an epidemic in which numbers of complete recoveries were observed.

No substantial advance in treatment is noted. The early attention of the orthopedic surgeon is to be had, even in the active stage, for the prevention of deformity in so far as is possible. Nerve anastomosis promises little.

Tuberculosis.—Enough work has been done upon the subject of tuberculosis alone to place it well beyond the limitations of a review. The importance of the disease as a contributing factor in infantile mortality is being more and more appreciated.

No definite solution of the controversy over bovine and human tuberculosis has been presented. The bovine type is generally accepted to be (and safely so) pathogenic for man, but in a less degree than its fellow of human type. It would appear that such infections in children usually manifest themselves as gland and bone disease.

As showing the great prevalence of the disease, Holt reports a series of 62 cases of pulmonary tuberculosis in infants under two years of age, 15 of whom were under six months, all having occurred in his service in one institution in a period of nineteen months. In 54 cases of the series, sputum, obtained by passing gauze into the pharynx, was positive for bacilli. Holt considers the opportunities for the infection of the infant very great. The value of the positive sputum examinations in these cases is emphasized, some of the patients presenting no physical signs in the chest. In the same institution bacilli were found in the spinal fluid of every one of 42 cases of tuberculous meningitis.

Whatever may be the outcome of the long continued discussion over the portal of entry, it is an undeniable fact, experimentally proven on living animals, that no knowledge as to the portal of entry may be had, either from the location or degree of development of the tuberculosis lesion. The digestive tract, as the point of entrance of infection, has been steadily gaining ground. A. S. Warthin, of Ann Arbor, concludes in a paper on the placental transmission of the disease, that "Congenital tuberculosis as a result of placental transmission is a definite factor in the etiology of the disease and cannot be dismissed with its mere recognition as a very rare possibility. It seems safest to concede the existence of potential tuberculosis in a large number of children, a number increasing in direct proportion to the age.

Certain aids to diagnosis, in the early recognition of tuberculosis, if not actually developed in the year past, have been so perfected and simplified as to be placed within the scope of all. I refer to the cutaneous reaction of von Pirquet, the ophthalmotuberculin test, best known in this country under the name of Calmette, and the per-cutaneous test of Moro. Time does not permit a detailed description of the technique in these tests. Inasmuch as I have seen no mention made in previous articles, it might be well to say that von Pirquet in his own demonstrations uses tuberculin without dilution. Shaw draws attention to the fact that Calmette uses the bovine organism in the preparation of tuberculin for his eye reaction. The Calmette reaction has been attended with some undeniable instances of destructive inflammation in the eye, and has brought down upon itself in consequence much condemnation. The Moro reaction is not in common use because of the greater difficulty in its application. Tu-

berculin used subcutaneously, for purposes of diagnosis, has no advantage over the previously mentioned tests, and is not a popular procedure with children. Whilst the value of all of these tests is generally recognized, there has arisen much discussion as to their dependability in infants under one year. Shaw presents the records of many *post mortem* examinations on infants under one year, showing 11 per cent. of tuberculosis, whereas statistics give a positive reaction in less than 1.5 per cent. of the same age. On the other hand, Holt, in presenting his report upon 1,000 tests, states that in his experience the tests were as reliable in young infants as in older children, and places it only second in importance to the demonstration of the bacilli. According to La Petra, if careful sputum examination and skin test are both negative, one may rule out tuberculosis whatever the signs in the chest. One other test merits mention, that of Deitre of Budapest. Deitre proposed to distinguish between human and bovine types of disease by the relative reaction to their respective tuberculi, the technique being similar to that of von Pirquet.

The treatment of tuberculosis has followed well-recognized principles. Following the French, Boston and New York pediatricists have been treating the disease, especially that of surgical type, by long-continued sojourn at the seaside, with daily salt bathing. Whilst favorable progress has been observed in cases under such régime, it cannot be said that they do noticeably better than under other well-recognized forms of attention. The radical surgical interference formerly practiced in gland tuberculosis is not generally endorsed.

Scarlet fever, measles and diphtheria.—The general apathy with respect to common diseases, constantly in our midst, is in no instance so clearly shown as with scarlet fever, measles and diphtheria.

We have added little to our knowledge of scarlet fever in the past few years, and the inactivity of the past year affords a striking contrast to the enthusiastic reception of a definite etiological factor not long ago announced.

Anna W. Williams, in a careful review of work accomplished and the study of a large series of cases, arrives at the following conclusion: that little definite is known with respect to this disease; that there exists no single pathognomonic symptom, and that the tales of infection from exposed articles after a lapse of

years are at least extravagant, even though we do not know how long the virus may remain active. An examination of the skin in many cases proves absolutely negative and leads to the conclusion that the exudates from the nose, throat and ear constitute the infectious element to be feared. The presence of adenoids, enlarged tonsils and suppurative diseases of the middle ear contributes to the persistence of the danger of infection. All attempts to definitely connect the streptococcus with scarlet fever in any other than the capacity of a secondary invader have failed, and the success of various sera in the treatment of the disease has all been dependent upon their action in preventing complications due to secondary invasion.

Diphtheria stands as before, with antitoxin the bulwark of our defence. Pyocyanase, an enzyme from the bacillus pyocyaneus, has been advocated in the treatment, but at best is only an adjunct. Gastro-intestinal disturbance has been noted after its use, and Schippe claims that it has no potency in destroying lingering bacilli, a point brought forth in its favor. The importance of so-called diphtheria carriers should be kept in mind.

Syphilis.—For all practical purposes the pediatricist is concerned only with congenital or inherited syphilis. Following the identification of the specific cause of the disease comes the evolution of the Wasserman serum test for the existence of the affection. It is claimed for this valuable aid to diagnosis that a positive reaction will be obtained in from 90 to 95 per cent. of cases showing syphilitic manifestations and in 50 to 60 per cent. of latent cases.

The isolation of the *treponema pallidum* and the positive serum test have gone far to clear up the seeming mystery in Colle's and Profeta's laws. It is more than probable that in all such instances all are victims of latent disease.

According to Clement, the fetus is infected at the moment of separation of the placenta, through the umbilical vein, and that this is analogous to the first stage, the secondary stage following in from two weeks to three months. The question of conveyance to the third generation is shadowed in doubt because of the difficulty of excluding infection. In congenital cases the importance of early recognition is emphasized.

Rheumatism.—Nothing of particularly striking nature has been done in this field. The admirable work of Poynton and Holmes in the etiology of the disease, done only a short time ago, has

been exhaustively presented to the Society on a previous occasion.

The several manifestations of the rheumatic infection have been clearly shown, the endocardial, the articular, relatively infrequent before the fourth year, and the neurotic. More recently Weill and Trevenot have pointed out a visceral type of the disease most often seen in younger patients. Tonsillitis has been found to be a frequent association.

Pertussis.—The bacteriology of this most important subject is still obscure. Jochman and Krause abroad, and Davis and Wollstein in this country, have been identified with the discovery of the most probable bacterium, an influenza-like bacillus. This organism has agglutinated with the serum of whooping-cough patients in high dilution, but is not definitely accepted.

In the treatment of the disease the abdominal belt devised by Kilmer of New York is of the greatest service, in lessening the intensity of the paroxysms, controlling the distressing vomiting, and, in my judgment, preventing hernia.

Infant feeding.—We come now to perhaps the most vital of all subjects with which the pediatricist has to deal, namely, infant feeding. The literature teems with contributions to this subject, and the too great attention to "how," with too great neglect of "why," as expressed by one authority, is largely responsible for the seemingly chaotic state of the subject.

Certain fundamental principles afford common ground upon which all may stand. All are agreed that the function of lactation has been neglected, that some of the effort devoted to improving cow's milk could well be devoted to securing good human milk. Further that human milk, even though considerably below the standard, is better than most possible modifications, and that mixed feeding is better than entirely artificial feeding.

The tendency of late has been to recognize the only partially completed development of the infant's gastro-intestinal tract at birth and the fact that this development continues over the larger part of a year, or the period of nursing. Now mother's milk not only furnishes an ideal food but fosters a normal evolution of the digestive function as no substitute can.

Most authorities are agreed that for all practical purposes cow's milk, suitably modified, is the best substitute, when substitution becomes necessary. Before considering methods of

modification let us consider the indications to be met. There must first be furnished a food that can be assimilated; secondly, there must be sufficient proteid to permit waste and provide for growth; thirdly, a proper amount of fat and carbohydrate to supply heat and a store of adipose tissue; fourthly, a sufficient supply of water; and, finally, the whole must have such properties that it will serve to assist in the development of the digestive system.

Each year contributions innumerable, of varying complexity and efficiency, are offered in solution of the difficulties of the problem. Upon what seems to me the erroneous assumption that the so-called percentage method of infant feeding is based on proteid intolerance, much criticism is based. First is the idea of fat intolerance, not introduced in the past year, but largely exploited. Undoubtedly fat is the offending element in many individual cases, but to assume that it is the sole possible source of trouble, to the exclusion of all else, is manifestly wrong. Investigators, Southworth and others, in the examination of large numbers of infants' stools find the proteid to be the base of all curds, fat being present in the coagulum in proportion as it is present in the food mixture.

There has been much discussed of late a method of infant feeding radically different in its basic principles from most that has gone before. By this method the quantity of food given to the infant is estimated upon the basis of energy present in the food as computed in heat units, or large calories, it having been determined what amount of energy per pound of body weight is required in twenty-four hours. Basing our computations upon this calorimetric method, we are at once at a loss to know what quantity of proteid, what quantity of energy element, fat and carbohydrate, and, finally, can the infant assimilate the mixture; in other words the essential principles of the subject. La Fetra seems to me to have pointed out the value of this method. He suggests that we bear in mind the minimum standard of energy for any given case, below which we may not, with safety, continue for any length of time; simply a valuable check upon one of the food requirements.

So much has been said of the relation of food to body weight that perhaps the importance of age as a consideration has been overlooked. Age is of importance as determining the kind and

quantity of gastric secretion present in the stomach, and of course the character of the food. Allen has given a most valuable summary, based upon work in a large number of cases, in which he determined the actual proteid needs, as well as a proper ratio of energy element. This requisite proteid quantity he terms the "Proteid quotient," and simply represents the quantity of proteid consumed in 24 hours divided by the pounds of body weight.

Rotch again emphasizes the importance of the milk laboratory in the feeding of infants. The accurate preparation of any possible formula, together with many other advantages of the laboratory cannot fail to recommend it. The preparation of acidulated milk for fermentative diarrheas, by means of cultures of lactic acid bacilli, is a more recently added factor in the armamentarium of the laboratory.

A further modification of the fats of cow's milk, looking toward a finer emulsion, has been used to some extent in France and Belgium, under the name of "Homogenized" milk. Birk, in a foreign review, takes exception to the extravagant claims made for the preparation, having found no advantage in its use.

The milk of the Alpine and Nubian goats is extensively used abroad. It is claimed that the milk is better taken because of the similarity in taste to human milk and better digested because of the lower boiling point of its fats. Its freedom from tuberculosis is not to be overlooked.

The use of standardized gruels of all cereals as compared with the inexact methods heretofore employed has greatly grown in favor.

Disorders of the gastro-intestinal tract.—Pyloric stenosis, spasmodic and hypertrophic, has received considerable attention. Practically the point is diagnosis. Rotch calls attention to the marked similarity between the clinical evidence of this condition and stricture of the lower esophagus. Carpenter is not satisfied with a diagnosis of hypertrophic stenosis, unless a tumor is palpable, having seen cases with classic symptoms come to autopsy with negative findings. The records of surgical interference in these very young subjects go to show that they do not readily tolerate plastic operations on the abdominal viscera and that such treatment should be one of last resort.

Dysentery.—The disappointing results following the use of serum in cases of specific dysentery are, according to Knox, in

large measure due to the fact that there are closely related strains of dysentery bacilli, only slightly different from the Shiga and Flexner type in cultural peculiarities, but producing no soluble toxin, and hence no antitoxin can be produced.

Congenital idiopathic dilatation of the colon.—Further reports of this most interesting condition have been presented during the year. Much evidence points to the origin of the condition *in utero* from mechanical causes.

Nutritional disorders.—In speaking of that most prevalent disorder, rachitis, Jacobi points out that fifty years ago the condition was unknown in America, whilst now, through the influence of immigration and poverty, it is common. He attributes it to bad air far more than to improper feeding, the generally recognized cause. Freeman also believes it to be a disease of asphyxiation, bringing as witness the failure to produce the disease by any possible feeding. The subcutaneous administration of adrenalin hydrochloride in weak solution has been advanced by Greco, a continental worker, as being efficacious.

Infantilism.—A. H. Wentworth has examined the duodenal secretions from infants, the victims of infantilism, and finds, experimentally in animals, that such secretions fail to stimulate the secretory function of the pancreas, whereas the secretions from normal infants invariably produce secretion. From his observations he concludes that there is not, in the stomachs of atrophic infants, a sufficient secretion of hydrochloric acid to stimulate the secretion in the duodenum.

Thompson reports as a constant finding in these cases atrophy of the ductless glands. Herter has recently published a small volume dealing with a condition he terms Intestinal Infantilism. His investigations show present in the intestinal tract of such patients abnormal bacterial flora, which he conceives to stand in causative relation. It is interesting to recall that the same authority, a few years ago, advanced somewhat the same theory to clear up the obscure etiology of pernicious anemia.

Ductless glands.—Fischer reports an interesting case of cretinism in which Lilienthal performed thyroid implantation. The case was one in which thyroid had been used by mouth, but badly borne; the thyroid from sheep was placed in the abdominal parietes, the patient's condition continuing to improve. Sir Victor Horsley paved the way for this work by animal experimentation.

Blood.—Morse, in an essay on the anemias of infancy, directs attention to interesting facts with respect to the normal blood of infants. The high hemoglobin at birth, falling off for three weeks, the high red-cell count (6,000,000), the high white-cell count (10,000 to 14,000), the relatively low polynuclear count (35 to 45 per cent.), are all important in any consideration involving the blood. Eosinophiles, even in great numbers, are not uncommon and of no great significance, whilst myelocytes occur in less grave conditions and in much greater number than in adults.

Genito-urinary system.—So much has been said of the frequency of nephritis in infants that I feel the necessity of a word on the subject. Morse has called attention to the occurrence of acute nephritis in the infant with almost complete absence of blood and blood elements from the urine. There was found in the urine of these cases, however, numerous small round cells, mononuclear, and some few polynuclears. Thompson, from the *post mortem* examination of 50 infants, reaches the conclusion that marked disturbances of circulation and moderate degenerative processes are common in such patients, but that whilst they give rise to albumen and casts, they do influence the permanent integrity of the organs.

The relative frequency and intractability of gonorrheal vulvovaginitis has prompted to an attempt to treat these cases with both vaccine and serum. Thus far the reports seem to be those of investigators too enthusiastic and too few in number.

Much else of interest and importance has been done in this field of endeavor and in others closely related, but I feel that I must have already consumed much time and sorely tried your patience.

Dr. Acker had listened with much interest to Dr. Copeland's paper. The review had been a very thorough one. Cerebro-spinal meningitis had recently been well discussed, but Dr. Acker wished to emphasize that Holt holds that the mere finding of turbid cerebro-spinal fluid is sufficient indication for the injection of Flexner's serum; one should not wait for the bacteriological identification of the specific organism.

Dr. Acker had been interested in the remarks upon poliomyelitis of the epidemic form; a few years ago he had reported some cases of this disease. It was worthy of remark that in the New York epidemic the disease was somewhat different from the text-

book description; for example, many of the New York cases were accompanied by neuritis and pain, and some resembled very closely epidemic cerebro-spinal meningitis. At present we have learned from pathological observation that the symptoms are caused not by immediate destruction of nerve elements, but that toxins cause an interstitial inflammation which in turn produces secondary destruction of the adjacent nerve structures.

With respect to tuberculin reactions, he believed in von Pirquet's test; it seemed to him the best and most definite. That is Holt's opinion, also.

As to infant feeding, it is interesting to observe the different views held by European and American pediatricists. In Europe they believe in high proteid percentages; in the United States we prefer low proteids and high fats. Czerny fears fats and thinks they cause more trouble than proteids. Americans now tend to feed higher proteid proportions. As to the character of fats, it has been learned that Jersey milk contains fat with large globules and unstable emulsion, causing trouble with digestion and absorption; Holstein milk, on the other hand, has small fat globules in stable emulsion, closely approximating human milk and easily taken care of by the infant digestive apparatus. After all, cow's milk can never be made like mother's milk; we must educate the child to digest cow's milk. As to the choice of sugars in milk mixtures, we have learned that if lactic acid fermentation gives trouble we may correct it by giving maltose; if butyric acid fermentation is present we then revert to lactose.

Dr. Randolph wished to correct the impression that might be made by some of Dr. Acker's remarks upon cerebro-spinal meningitis. Flexner did not recommend withholding the serum until the diagnosis was confirmed by bacteriological examination from the standpoint of clinical preference, but merely as a measure of scientific accuracy, to insure the study of results in a large number of cases bacteriologically confirmed.

Dr. Tayler-Jones said that of the tuberculin tests von Pirquet's was most satisfactory in young children—under one year, for example. She had recently used it upon a child with an atypical pneumonia; at the second test the reaction was positive, and the diagnosis of tuberculosis was confirmed by finding the bacilli in the stools—which, by the way, is a much more satisfactory way of searching for them than by attempting to obtain specimens of sputum by swabbing the throat. She had had the opportunity of working with La Fetra on the calorimetric basis, at the same time feeding comparative cases with the high-fat method. It has been pretty clearly demonstrated that foods with low caloric value are preferable, in either case expressing it in percentages is best. She had also worked with the lactic-acid bacillus by injecting suspensions of the bacilli into the rectum and allowing the fluid to remain; it was hoped that the antagonism of this or-

ganism to other pathogenic intestinal flora would prove beneficial in diarrheal conditions and colitis. The results were entirely unsatisfactory. She had found Dr. Copeland's paper very instructive and interesting.

Dr. Acker called attention to a recent observation by Holt and his assistant, Clark, to the effect that lime water in milk mixtures not only furnishes the necessary alkalinity but increases the flow of hydrochloric acid and so aids digestion.

Dr. A. F. A. King desired to say a word upon the composition of infant foods. This is a subject upon which medical opinion seems to be constantly changing; twenty-five years ago "condensed milk" was much in favor, until it was found that infants did not thrive upon it; then Walker-Gordon laboratory milk was in high favor, but presently that went out of fashion. Now there seems to be a transition from low-proteid feeding to high proteids and low fats. It appeared to him that the milk mixture made very little difference for healthy children; it was infection that killed the babies. If the bottles and nipples and all the utensils used in the preparation of the infant foods were kept properly sterilized and clean materials used in the food itself, the mortality records would be much improved. A formula composed of good milk, boiled water, enough lime water, and sugar will do in any case, provided it be kept minus infection.

Dr. Chappell agreed almost entirely with Dr. King, except that he would insist upon the fact that it is the milk itself that does most of the infecting. We can instruct persons how to keep utensils clean, but we cannot tell them where they can certainly get clean milk.

Dr. G. L. Magruder endorsed Dr. Chappell's views upon the milk-supply situation. He had long worked upon this problem, and repeated investigations have amply demonstrated the infected character of the milk. The death rate of children will continue to be high until legislation can be secured requiring bacteriological and temperature standards, as in Boston and New York, and *compulsory pasteurization* under the supervision of the Health Officer of all milk that cannot correspond to Class I of the Washington Milk Commission.

Pasteurization recommended by this Commission requires that milk should be kept at 140 F. for twenty minutes.

This is known as *perfect pasteurization*, in contradistinction to commercial pasteurization, which requires the milk to be brought to a higher temperature for a very short time. Perfect pasteurization destroys all pathogenic organisms without in any way injuring the nutritive properties or damaging the enzymes of the milk. Sterilization should not be allowed under any circumstances, as it is destructive to the enzymes and the nutritive properties of milk.

Perfect pasteurization has improved and will continue to improve the statistics of infant mortality.

But this should not be allowed to diminish the supervision of the milk production at the farm and the distribution to the consumers. The Society should aid with all its power to secure the much needed legislation towards these ends.

The treatment of pertussis had been commented on by Dr. Copeland, and in that connection Dr. Magruder wished to call attention again to a treatment he had advocated years ago—the administration of the double chloride of gold and sodium. He had observed an astonishing calmative effect from the drug in a severe case of pertussis and had reported the case to the Obstetrical Society. Since then he has repeatedly used the drug with excellent results. It is not always successful, but usually it is productive of much good; it never does harm. It is best administered in doses of 1-12 to 1-24 grain every two or three hours.

Dr. Acker wished to protest against Dr. King's remarks upon the subject of infant feeding, and insisted that great and very real progress had been made in the scientific feeding of infants. We cannot indiscriminately mix milk and diluents and thus prepare good infant food; whatever we do must be intelligently done.

Dr. Copeland said that Dr. Acker had brought out a valuable point in calling attention to the effect of lime water in aiding gastric digestion in infancy. Dr. Copeland thought that the best, and perhaps the only, beneficial effects from lactic acid bacillus administration would be obtained from feeding milk containing the organism; it seemed hardly rational to expect much good from the injection of suspensions of the organism into the rectum. He expressed surprise that Dr. King should be so iconoclastic with regard to infant feeding; he was by habit so careful about the measurements of the maternal pelvis and the fetal head, it seemed inconsistent to decry equal care in the preparation of the infant's food. The calorimetric method of infant feeding will probably prove most useful merely as a check upon the percentage method and will serve to establish the mark of the minimum of energy below which it is not safe to go.

FIELDING OULD was a well-known man-midwife in Dublin, in the 18th century. He received the degree of M. D. in 1760 from Trinity College, Dublin, the first time it was ever conferred on an obstetrician. He became the second master of the famous Rotunda Hospital, Dublin. He was also the first obstetrician in Ireland to be knighted, and on the occasion, the following epigram appeared:

“Sir Fielding Ould is made a knight,
He should have been made a lord by right,
For then each lady's prayer would be,
'O Lord, good Lord, deliver me.'”

PECULIAR DELIRIUM IN TYPHOID FEVER: REPORT
OF A CASE.*

BY FRANCIS E. HARRINGTON, B. S., M. D.,

Washington, D. C.

It is not my purpose to enter upon any discussion of typhoid fever. The 4,166 cases in this city in the past four years have excluded it from the class of rare affections. Unusual conditions, however, sometimes exist, and I desire simply to report a case that came under my care showing a strange form of delirium.

White man, age 35, was taken sick October 2, 1908. From that date to October 10th there were no unusual symptoms. The temperature ranged between 102 and 103 F., morning and evening.

On the seventeenth day of the disease he had a profuse hemorrhage and the temperature fell to 97.2 F. From that time the temperature curve was very irregular, with morning rise and evening fall. Only slight delirium was noted. Extreme nervous symptoms became more marked, and on the twenty-third day of the disease he suffered a severe collapse. Heroic stimulation acted happily and he rallied. There were no more hemorrhages but an endocarditis became troublesome. It was at this period of the disease that the peculiar delirium developed. He slept very little and all the sedatives used caused marked depression. Subtultus and carphologia with low mutterings and a palsied working of the lower jaw were manifest. When he lay on his back he was comparatively quiet. When turned on his left side his delirium assumed a happy phase. He would talk of flowers and sunshine, whistle and sing snatches of grand opera, and to all appearances was without pain and happy, taking all nourishment and medicine. When he was turned upon his right side the delirium assumed a form of persecution. His features were distorted and his eyes staring, his hands and feet working convulsively. His voice would grow harsh and he would constantly command some one to "halt." This change would take place in just the time it required to turn the patient from one side to the other.

On the thirty-third day of the disease he suffered a second col-

*Reported to the Medical Society, January 20, 1909.

lapse and rallied only to manifest a more active and startling delirium. Two days later a third collapse that would not yield to stimulation, and he died from exhaustion.

Dr. Chappell said that the case was unique and of great clinical interest. So far as his experience went, the nearest approach to Dr. Harrington's case had been a man who was suffering from grip and who developed a very happy delirium with an inclination to musical expression.

THE VALUE OF THERAPEUTICS.

BY PHILIP S. ROY, M. D.,

Washington, D. C.

We have only to turn to the current medical literature to find that there is a tide in medical thought towards pharmacology, with a growing interest in the principles and practice of therapeutics. A textbook on the practice of medicine that does not give a comprehensive therapy is a danger, if not a disgrace, to medical science. All great writers on medical practice have appreciated the importance of therapeutics. The great Latham, of England, said that the very treatment of diseases is truly a part of their pathology. "What they need and what they can bear, the kind and strength of the remedy and the change that follows its application are among the surest tests of their nature and tendency." James Sawyer says in the Lumleian lectures for 1908, "In any particular instance of disease the therapeutic response to a remedy is a basis of judgment as to the nature of the case, both in diagnosis and pathology." There is no nux vomica and hope about these statements.

No physician can successfully apply therapeutics who does not keep the whole pathological field before him. Names like typhoid fever and pneumonia seem necessary for classification, but how poorly they express the pathology! I will mention three methods by which we determine the value of drugs and other therapeutic remedies in disease--the clinical method, that is, the action of drugs in disease; the physiological method, the action of drugs upon man and animals in health; and, thirdly, what we

learn through the laws of physical chemistry of drug action. Clinical experience, the oldest method in therapeutics, hoary with age, extending over two thousand years, is today the means by which we verify the other two methods. Niemeyer was so wedded to the clinical method that he did not hesitate to say that nothing had been gained in the treatment of disease through the physiological method. Niemeyer was a master of observation. He, from clinical observation, wrote the dictum, "Digitalis in pure uncomplicated hypertrophy is unsuitable." Walshe, another genius in observation, wrote in his great book on diseases of the heart these clinical deductions on digitalis. Walshe hesitated to use digitalis in aortic stenosis, and speaks of it as hazardous in dilatation, while he says, "Of its danger in cases of mitral and tricuspid difficulty I entertain no doubt." We can turn from these two masters in clinical observation to the words of James Sawyer, whose clinical knowledge has been strengthened by a knowledge of the physiological action of digitalis. Sawyer says, "I give digitalis when the veins and arteries at the same time point to its use, namely, when the veins are too full and when the arteries are not full enough, and the pulse is soft."

With these directions we can almost ignore the special valvular lesions. I know of no better illustration of the value of the physiological method in therapeutics than what has been learned through it of the action of digitalis. Not only have we by animal experiments accurately determined the value of digitalis, but it was from laboratory experiments that we learned how often the drug as given us by the druggist is inert. The English physician has never had the trouble the American physician has had in obtaining good digitalis. Physical chemistry as applied to medicine is a new science, but I believe it has a brilliant future in therapeutics, particularly in the field of electro-chemistry. The ion method in therapeutics is based upon the ion or electric relation of drugs to the living tissue. Among the first to study the ion action of drugs were Myers and Overton. They concluded from their observations that ether and chloroform narcosis was due to an ion union between the lecithin or other lipoids of the central nerve cells and the ether and chloroform ions, which for a time destroyed the physiological action of the central nerve cells. Following the experiments of Myers and Overton, Nerking has made experiments that seem to confirm the former ex-

periments. Nerking produced complete anesthesia in animals and then injected into the blood of the animals lecithin. They almost immediately regained consciousness. Nerking thinks that the free lecithin in the blood has a stronger ion affinity for the anesthetic than has the combined lecithin in the central nerve cells; therefore, the brain cells were freed of the anesthetic and regained their physiological action. Biltz studied the action of ion hydrate as an antidote for arsenic. He found that the colloid iron was electro-positive and arsenic electro-negative. This union robbed the arsenic of all toxic affinities for the tissues.

Pauli has applied the laws of electro-chemistry to pharmacology in his study of the sulpho-cyanate of sodium. Pauli found in his laboratory that the positive ions of the sulpho-cyanate of sodium prevented the negative ions from precipitating protein, in this respect resembling the ion relation of sodium bromide and sodium iodide to protein. Pauli concluded that the sulpho-cyanate of sodium was an alterative and sedative. With these laboratory conclusions Pauli tested the sulpho-cyanate in his Vienna clinics. He used it with excellent results in insomnia, arteriosclerosis, syphilitic headache, the nervous disturbances at the menopause and the monthly period, also in neurasthenia. I have so far found the sulpho-cyanate particularly useful in the nervousness at the menopause and the monthly period, also in lowering blood pressure. One case of insomnia of several months' standing was cured by the sulpho-cyanate in two weeks. I am now using the sulpho-cyanate in two cases of neurasthenia with good results.

The use of cholesterin by Reicher in pernicious anemia and the use of a certain form of arsenic by Ehrlich for trypanosomes of sleeping sickness are recent additions to chemo-therapeutics. There can be no question that as the laws governing chemo-therapeutics become clearer to us, particularly those of electro-chemistry, our whole therapeutics will become more definite. Both clinical and physiological therapeutics, it would appear, must find explanation through physical chemistry. Recently at a meeting of the Medical Society Dr. Thomas C. Smith, in speaking of the treatment of eczema in children, said that he had found the citrate of iron and quinine his greatest aid in treating these cases. Physical chemistry tells us that each salt has its specific ion relation to the tissues, and some day what Doctor Smith has

found out clinically about the double salt of iron and quinine will be worked out through physical chemistry and put in a chemical formula. From what has been said about the part played by electro-chemistry it seems certain that electro-therapeutics must be an important factor in the treatment of diseases. I will mention only one of the newer applications of electro-therapeutics in lowering blood pressure. George Oliver in his second edition, 1908, of "Studies in Blood Pressure," says that he has seen a blood pressure of 230 mm. hg. fall, under the use of electricity, to 160 mm. hg., a fall which was remarkably persistent, notwithstanding the discontinuance of further electric treatment.

What has in recent years led to so much skepticism towards therapeutics, almost to the annihilation of pure pharmacology? No one can stand at the bedside of the sick and intelligently give drugs, without knowing the great value of drugs in disease. Oliver T. Osborne, in his paper read at the last meeting of the American Medical Association, gives first place, in the recent decline of pure therapeutics, to the inadequate instruction in laboratory and clinical work. Looking to the medical schools we can go a step further and find that many of the modern textbooks on the practice of medicine give no concise therapeutic instruction; indeed, some of them in spirit rather discourage the use of drugs. Turn to the hospitals. The interne has a beaten track in therapy that has been walked for twenty years by his predecessor. In the last six months I have asked internes in three of our hospitals if their tincture of digitalis was a physiologically assayed tincture. They did not seem to know what I meant. I asked if they knew whether the digitalis leaves were good English leaves or assayed leaves. They knew nothing about the quality of the leaves, nor did they know that digitalis leaves would quickly undergo deterioration unless very carefully kept. I do not suppose any city in America has more intelligent hospital internes than Washington; therefore I do not hesitate to mention these facts. These hospital physicians had never been told, during the recent decadence of the therapeutics of the pharmacopoeia, the importance of the quality of drugs. I found one hospital interne thoroughly equipped in the science of therapeutics.

I use digitalis as a type, for it is one of our most valuable drugs and one that is often furnished to the physician, inert. About four years ago I went to a large prescription drug store in this

city with a prescription intended for a patient, containing digitalis. I asked the druggist about the digitalis leaves he used in making his tincture. He showed me some little packages of foxglove put up in New York State. They were never intended for making tincture of digitalis and are generally inert. Six months ago I wrote for tincture of digitalis made from assayed leaves. Of course, assayed leaves may have become inert from improper care. The druggist who got the prescription called me up over the telephone and told me he had never been required before by any physician to use assayed leaves for his tincture of digitalis. I then told him he could use English leaves, even if they had not been assayed; he said he never kept them. Is it any wonder that, with such druggists, physicians get disgusted with therapeutics? I will mention some of the other drugs I have found clinically inert as I received them from the druggist: cannabis indica, hyoscyamus, strophanthus, belladonna, physostigma, and I have had salicylate of soda put in prescriptions that would make a dog sick. All these things I find in the city of Dr. H. W. Wiley. Edmunds found the tincture of digitalis in this country to vary 350 per cent. Miller, of Chicago, recently tested two samples of digalin upon dogs without obtaining any digitalis effect.

It will be interesting to give a little of the history pertaining to the introduction of digitalis into medicine. The date that it was first used by the country people in England cannot be fixed, but William Withering, of the Birmingham Hospital, in 1785 wrote the first clear account of the medical use of digitalis, particularly as a diuretic. Withering says in his preface, "I wish the reader to keep in view that it is not my intention merely to introduce a new diuretic to his acquaintance, but one which, though not infallible, I believe to be much more certain than any other in present use. After all, in spite of opinion, prejudice or error, time will fix the real value upon this discovery and determine whether I have imposed upon myself and others or contributed to the benefit of science and mankind." We know that Withering's benefit to science and mankind is far beyond what he could have imagined.

The Council of Pharmacy of the American Medical Association is doing good. Some of the men on the work are not the best. One of the recent recommendations to the physicians by

the Council is Stern's viburnum compound. That there has been a lowering of standards by druggists in the last few years there can be no doubt, and I think it has been largely due to the use of proprietary preparations by physicians. The official preparations in the drug store have become the wall flowers. Let the physician return to the pharmacopoeia and the druggist will again take the pride that he formerly did in his profession. The standard of our drugs must determine the efficacy of our therapeutics.

One of the most important divisions in therapeutics is dietetics. Here the greatest strides have been made. Foods are now absolutely on a definite chemical base. With the exception of the Children's Hospital, I believe no attempt has been made by any hospital in this city to put feeding on a scientific basis. The nurses do not seem to know that a pint of liquid beef, containing 12 per cent. protein, can be no better than three pints of milk. The beef will cost from 75 cents to a dollar and the milk 12 cents. It must be very rarely that a pint of one of the liquid-beef foods can be taken in a day without disturbing the stomach. The nurses do not know the high food value of bread and butter.

The questions on therapeutics asked by some of the medical examining boards are neither scientific nor practical, and at best could only test the memory. Serum therapy, vaccine therapy and the therapy of the internal secretions must have their explanation through physical chemistry. One of the latest suggestions we have had on the therapy of internal secretions comes from Cyon, who believes that the secretions from the thyroid, adrenals and pituitary glands have the special function of regulating the nerves of the heart.

A word about bloodletting. With the exception of Steven's Therapeutics no work on this subject that I have seen gives more than passing notice to bloodletting. I will make a plea for it in the words of Sawyer, who says, "Phlebotomy is necessary in danger of death from distension of the right cavities of the heart. In such a case I have seen the moribund saved by venesection. The more sudden the distension the greater the need for blood letting. A cardiac cavity is a hollow muscle like the urinary bladder. Hyperdistension of either, results in its paralysis, with full retention of its contents."

I believe that therapeutics has a bright future before it.

Physical chemistry, with its endless possibilities, has come to the aid of the clinical method and the physiological testing of drugs. The works on the practice of medicine which only give diagnosis, pathology and therapeutic daubs will not endure, while the words of Latham will go from generation to generation truly defining the value of therapeutics.

IN MEMORIAM.

FREDERICH EDWARD MAXCY, M. D.

FREDERICH EDWARD MAXCY was born in Gardiner, Maine, May 15, 1853, son of Ira and Sarah A. (Fuller) Maxcy. He was of the fifth generation of descent from Lieutenant Benjamin Maxcy, an officer in the War of the Revolution. His mother was a direct descendent of Edward Fuller, the Puritan, of Mayflower fame.

He received his early education in the public schools of his native city, graduating from the Gardiner High School at the age of fifteen. Subsequently he attended the Westbrook (Maine) Seminary for two years, and Cooper Institute in New York for a similar term. He graduated from the Maine Medical School at Bowdoin College in July 1879. The following year he was connected with the Maine General Hospital in Portland as interne, and in August, 1880, commenced the practice of Medicine in Saco, Maine, in which city he continued until October, 1891, when he moved to this city where he successfully continued the practice of his profession to the day of his death, December 25, 1908.

Dr. Maxcy was visiting physician to the Freedmen's Hospital for many years and rendered that institution signal service, being especially successful in the diagnosis and treatment of diseases of the heart and lungs.

He was married January 18, 1883 to Estelle A. Gilpatric, of Saco, Maine, who with two children, Caro Estelle Hewitt and Kenneth Fuller Maxcy, survive him.

Your Committee submit the following resolutions :

WHEREAS, we have learned with profound sorrow of the death of our fellow member DR. FREDERICH EDWARD MAXCY, December 25, 1908, therefore be it

Resolved : That the Medical Society of the District of Columbia places on record our expression of regret at the loss of so worthy and well qualified a physician and sincere friend.

Resolved : That we deeply sympathize with the bereaved family in the loss of so true and kind a husband and father.

Resolved : That this tribute of the Medical Society of the District of Columbia be made a part of the records of said Society and that a copy thereof be forwarded to the bereaved family of our deceased friend and associate.

Signed :

JOHN T. COLE, M. D.

EDWARD L. MORGAN, M. D.

N. R. JENNER, M. D.

WM. E. ROGERS, M. D.

WM. E. ROGERS was born in Alexandria County, Va., in 1878 and died at Providence Hospital, Washington, D. C., November 22, 1908, of typhoid fever.

His early education was obtained in the public schools of Alexandria, and at the age of twenty-one he entered the Medical Department of Georgetown University, from which he was graduated in 1904.

He served his internship at Providence Hospital and began active practice immediately after leaving that institution. Although engaged in the practice of his profession but a short time, he had already given promise of a valuable and successful career.

Dr. Rogers was connected with the staffs of the Providence, Georgetown University, and Casualty Hospitals, and in addition to membership in this Society, he held membership in the Medical Association of the District of Columbia, the Medical Society of the Georgetown University, and the Washington Society of Mental and Nervous Diseases.

Resolved : That this Society expresses its keen sense of the loss it has sustained in the death of DR. ROGERS, one of the most promising of its younger members, and extends to his family its sympathy in their bereavement.

Resolved : That these resolutions and preamble be spread upon the minutes and that a copy of the same be sent to the family.

Signed :

PRENTISS WILLSON, M. D.

ROY D. ADAMS, M. D.

GLENN I. JONES, M. D.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, January 4, 1909.—The President, Dr. H. D. Fry, presided; about 100 members present.

The following were proposed for active membership:

W. C. Borden, George Washington University, . . .	1883
W. B. Carr, George Washington University, . . .	1907
Wm. J. French, George Washington University, . . .	1905
Ralph A. Hamilton, Georgetown University, . . .	1904
Bernard H. Harrison, Howard University, . . .	1903
Martha A. Brewer Lyon, Howard University, . . .	1907
William Malcolm, New York University Med. College, .	1891
Wm. Cabell Moore, University of Virginia, . . .	1902
Geo. J. Newgarden, Jefferson Medical College, . . .	1889
Henry Fenno Sawtelle, Coll. Physicians & Surg., Chicago,	1902
Wm. F. M. Sowers, Johns Hopkins University, . . .	1900
T. J. Sullivan, Georgetown University, . . .	1904
R. S. Trimble, National University, . . .	1903

The Corresponding Secretary read a letter from Dr. Wm. A. White, Superintendent of the Government Hospital for the Insane, inviting the members of the Society to attend a series of meetings of the hospital staff, at which papers will be read bearing upon psychiatry, neuro-pathology, etc. He moved that the invitation be accepted and that he be given authority to place the announcements of the meetings upon the Society's program cards. The motion was carried.

The Treasurer presented his thirty-fifth annual report, and Drs. G. Wythe Cook and Woodward were appointed to audit the accounts.

The dues of Dr. Thomas Taylor were remitted for life.

The following were elected officers for 1909 :

President, Dr. E. A. Balloch.

Vice Presidents, Drs. John Van Rensselaer and G. T. Vaughan.

Corresponding Secretary, Dr. T. C. Smith.

Recording Secretary, Dr. H. C. Macatee.

Treasurer, Dr. C. W. Franzoni.

Librarian, Dr. E. L. Morgan.

Censors, Drs. D. Olin Leech, H. B. Deale, J. S. Wall, F. R. Hagner and J. F. Moran.

Dr. Hooe offered as a standing resolution, That every paper not read at a regular meeting because of lack of time shall be read at the next succeeding meeting. Dr. S. S. Adams moved, as a substitute, that no person other than a member be allowed to take the time of the Society without the consent of the Society. Dr. Franzoni offered as a substitute, that the whole matter be referred to the Executive Committee for consideration, with directions to report recommendations. Seconded and carried.

It was ordered that the regular meetings be resumed on Wednesday, January 13th.

Wednesday, January 13.—The President, Dr. E. A. Balloch, presided; about 100 members present.

Dr. D. S. Lamb, Chairman of Committee on Editing the Transactions, read the following report of the work of his committee for 1908:

"The Committee on Editing and Publishing the Transactions of the Society respectfully submits the following report for the year 1908.

"During the year Dr. M. G. Motter resigned from and Dr. Charles S. White was added to the committee. Dr. White has charge of the advertisements. Dr. Motter is entitled to the thanks of the Society for his efficient work as a member of the committee.

"The number of the ANNALS for January, 1909, completes Volume VII, six bimonthly numbers, making a total paging of 492 plus an index of 9 pages, in all 501 pages. This is 59 pages less than in Volume VI. The explanation of this less number of pages is the fact in part that the papers read before the Society, taken altogether, are shorter papers than in previous years. A number of papers, also, have been published elsewhere than in the ANNALS; in some cases abstracts have been received, in others not, although the Society requires that such abstracts be furnished. Some papers and cases reported have not been published at all. The reason seems to be that the readers and reporters do not care to take the trouble to revise the papers or write out the reports.

"There has been no change in the plan of publication; but much attention has been given in this last volume to abstracts from other journals, preferably those which are less likely to be seen by the members of the Society generally.

"The committee at present has no recommendations to make."

Respectfully submitted,

(Signed) D. S. LAMB,
CHAS. S. WHITE.

An appropriation of \$162.75 was made for the January number of the ANNALS.

The President announced the following appointments to committees for 1909:

Standing Committees for 1909.—Executive Committee—To serve 5 years: W. C. Woodward, D. P. Hickling, D. K. Shute. To serve 1 year (to fill vacancy): R. W. Baker. Public Health—J. W. Chappell, Truman Abbe, G. W. Wood, R. S. Lamb, H. S. Dye, Ida Heiberger, J. B. Briggs. Essays—T. C. Smith, P. C. Hunt, N. P. Barnes.

Special Committees for 1909.—Editing the Transactions—D. S.

Lamb, C. S. White, B. G. Pool. Directory for Nurses—T. A. Groover, Ada R. Thomas, Monte Griffith. Library—E. L. Morgan, Robert Reyburn, J. T. Howard. Microscopy—Collins Marshall, D. W. Prentiss, W. W. Wilkinson. History of the Society—D. S. Lamb, R. T. Holden, C. W. Franzoni, L. Eliot, G. Wythe Cook. Milk Commission—W. M. Sprigg, D. P. Hickling, H. H. Donnally, Elmer Sothoron, J. S. Wall.

Reviewer in Surgery, November, 1909 (to fill vacancy): E. M. Hasbrouck.

Dr. Geo. Ben Johnston, of Richmond, Va., addressed the Society upon "Fibroids of the Uterus Complicating Pregnancy." Discussed by Drs. Bovée, I. S. Stone, J. Thos. Kelly, Glazebrook, Sprigg and W. P. Carr.

Wednesday, January 20.—The President, Dr. Balloch, presided; about 75 members present.

The following preambles and resolution, offered by Dr. T. C. Smith, were referred to the Executive Committee for consideration and report:

"RESOLUTION IN REGARD TO THE EDUCATION OF THE PUBLIC.

"1. WHEREAS, the people of Washington, stimulated by the Tuberculosis Congress, are eagerly searching for veracious information about taking care of their health;

"2. And WHEREAS, an individual physician is necessarily less capable of advising than the collective profession of Washington;

"3. And WHEREAS, many of the public are ill-advised enough to believe the affirmations of charlatans made for their own profit, failing ready access to collective medical opinion;

"4. And WHEREAS, the newspapers of Washington have declared their willingness to cooperate in an effort to enlighten the public, countenanced by the medical profession;

"5. And WHEREAS, a recognition of this need has eventuated in a fruitful cooperation between the medical profession and the public by means of the press, in other cities, especially Chicago, San Francisco and lately Baltimore;

"6. And WHEREAS, such mutual understanding not only helps to fulfill our function as guardians of the public health, but redounds to our credit individually as well as collectively, besides furnishing a means of combating charlatanry and puffery, as well as the anti-scientific spirit as shown in the anti-vivisection and anti-vaccination movements; therefore be it

Resolved: That this Medical Society of the District of Columbia deems itself a fit and proper body to inaugurate and maintain a plan of instruction of the people by means of simple, sufficient and attractive official bulletins, circulated with the help of the local press or by such other means as after due consideration seems best."

The following resolution was adopted: *Resolved*, That we tender to the members of the Cosmos Club a vote of thanks for their favor of the thirteenth instant in extending the courtesies of the Club to the Medical Society for the purpose of giving a complimentary Smoker to Dr. Geo. Ben Johnston.

The death of Dr. Frederick E. Maxcy was announced, and the Chair appointed Drs. E. L. Morgan, Jenner and J. T. Cole a committee to prepare and present suitable resolutions of respect to his memory.

The resignation of Dr. D. J. Kelly was accepted.

Dr. Harrington reported a case of Peculiar Delirium in Typhoid Fever. Discussed by Dr. Chappell. See p. 64.

Dr. Kebler made an address upon the subject of "Nostrums: a Menace to the Public Health," with stereopticon illustrations. Discussed by Drs. D. S. Lamb, Kober and T. C. Smith.

A vote of thanks was given Dr. Kebler for his address, and an expression of the sympathy of the Society with the efforts of the Department of Agriculture to combat the nostrum evil was tendered.

Wednesday, January 27.—The President, Dr. Balloch, presided; about 100 members present.

Dr. E. L. Morgan, for the committee, reported resolutions of respect to the memory of Dr. Frederick E. Maxcy, which were adopted. See p. 71.

Dr. Prentiss Willson, from the committee, reported resolutions of respect to the memory of Dr. Wm. E. Rogers, which were adopted. See p. 72.

Dr. Mackall, Chairman, read a report from the Executive Committee; the recommendations contained therein were considered *seriatim*:

1. That the medical practice Act now pending before Congress be approved. Discussion of this recommendation emphasized that the approval recommended referred to the Act as originally proposed. This recommendation was adopted.

2. That the President of the Society appoint a committee of three to attend the Pharmacopoeial Convention. Objection being made that no request had come for the appointment of delegates, the letter asking for the appointment of a committee to make recommendations to the A. M. A. committee on Pharmacopoeial Convention, was read. The matter was referred to the President, with power to appoint a committee.

3. That it is not desirable to take final action at this time upon the request of Dr. Wm. A. White that a number of the ANNALS be set aside for the publication of the papers read at the series of meetings of the staff of the Government Hospital for the Insane. Dr. Kober expressed the opinion that it would be highly desirable to publish these papers and moved that Dr. White's propo-

sition be accepted. The motion was seconded. On motion of Dr. Franzoni, action was deferred until the next meeting of the Society.

The names of Drs. Theo. Y. Hull, Chas. H. James, Jr., and Carlisle P. Knight were dropped.

A letter from Gen. Sternberg, President of the Association for the Prevention of Tuberculosis, addressed to the President of the Medical Society, was read, calling the attention of the members of the Society to the work of the Tuberculosis Association and asking for the active support of the profession.

Dr. J. D. Morgan moved that the Society extend an expression of its good will for the work of the Tuberculosis Association. Seconded and carried.

Dr. F. Fremont-Smith briefly outlined what the Association had undertaken and what it hopes to accomplish.

Dr. S. Ruffin presented a typhoid fever chart, showing the effect of the Administration of a Bacterial Vaccine.

The chart was the temperature record of a case of typhoid fever of moderate severity and of average duration of fastigium, but which, instead of undergoing the usual termination by lysis, assumed what might be called a chronic phase, with intermittent fever, the daily excursions ranging from below normal to as high as 101 F. The febrile disturbance continued for a number of weeks without any evidence of tendency to spontaneous cure of the condition; the probable explanation of the phenomenon was that the normal defensive processes had been incomplete and that something more was needed to establish immunity. He therefore inoculated the patient with a vaccine containing 800,000,000 dead typhoid bacilli; there was a prompt and sharp reaction, with high fever of short duration, followed by a satisfactory subsidence of the temperature and the establishment of convalescence.

Dr. Hagner said that the case was highly instructive and interesting. He had had no experience with inoculations in typhoid fever, but bacterial vaccines had been used by him in the treatment of chronic cystitis, making the vaccines from the identical infective organism in each case. He had at present under treatment an old man with a severe cystitis following prostatectomy; Dr. Nichols had prepared a vaccine from the colon bacilli responsible for the condition, and inoculations of this vaccine had been attended with most gratifying results.

Dr. Ruffin then read a Review of Internal Medicine. Discussed by Drs. Russell, Wood, Lochboehler, Ramsburgh, G. L. Magruder, Neate, Acker, Macatee. See p. 30.

Wednesday, February 3.—The President, Dr. Balloch, presided; about 100 members present.

The Treasurer presented his report for January, showing receipts, \$416.25; disbursed, \$167.75.

The Chair announced the appointment of Drs. G. L. Magruder, Claytor, Barton, Barnes and Fremont-Smith a committee to consider and make recommendations upon matters suggested by the A. M. A. Committee on Revision of the Pharmacopoeia.

An invitation to the Society to attend a meeting of the City of Washington Branch of the American Pharmaceutical Association was presented by the President, who urged members to attend the meeting.

Dr. Wood presented the following resolution: That the Medical Society discuss the advisability of examining the stools and urine of persons having had typhoid fever in order to ascertain if they are chronic germ carriers, and to take such steps as will prevent their contaminating others. Referred to the Committee on Public Health.

Dr. Vaughan presented two specimens: a Lumbricoid Worm in an Appendix, and a Prostate Gland.

Lumbricoid worm in an appendix.—Woman 30 years old; referred to him by Dr. Gott, with the provisional diagnosis of appendicitis. She had been sick eight days, with the usual train of symptoms. This was the fourth attack in two years. The pain in this attack was not exactly typical, because it began in the back on the right side and by its character was suggestive of ureteral colic. At the operation the appendix was easily found and was seen to project upward in two coils, like a snake preparing to strike. The appendix was cut off in the usual way and the stump was sewed over. A bystander, examining the appendix, found that it contained a lumbricoid worm. The patient made a good recovery. This was the first case he had heard of in which a lumbricoid was found in the appendix, although the oxyuris has been often encountered.

Prostate gland.—White man, age 72. Had had trouble in emptying the bladder for four years, and at the time of operation his residual urine measured 2,000 cc., or two quarts. The prostate was not unusually large, but projected three quarters of an inch above its normal level. The suprapubic operation was done, and on opening the bladder the third lobe could easily be seen projecting, encroaching upon the urethral orifice on three sides. The patient made a good recovery.

Dr. Barton read an essay entitled "Internal Hemostasis; Its Physiological and Pharmacological Aspects." Discussed by Drs. Carr, Harrington, Williams, Nichols, Lochboehler, Roy, Willson and Barton. See p. 10.

Dr. A. F. A. King read a paper upon the "Bryce-Teacher Early Human Ova." Discussed by Drs. I. S. Stone, R. D. Adams, Wood, Borden and King. See p. 1.

Wednesday, February 10.—Dr. Balloch, the President, presided; about 75 members present.

An appropriation of \$9.25 for engravings and typewriting was granted.

Dr. Mackall, for the Executive Committee, reported that the committee had considered the matter referred to it at the stated meeting of January 4, 1909, and recommended as follows:

"1. That all papers that are passed over at any meeting for lack of time shall be read at the next succeeding meeting, when they shall have precedence over all other papers excepting the essay of the month.

"2. That no one but a member of the Society shall take up the time of the Society discussing any subject unless requested so to do by the President. This has been the usual custom in times past."

The Chair ruled that the recommendations were in the nature of amendments to the by-laws, and should be presented and acted upon as provided in the constitution. It was ordered that the recommendations be read at the next stated meeting.

An invitation from a committee having the meeting in charge requested the attendance of the members of the Medical Society at a lecture by Dr. Rotch, at the George Washington University, Thursday, Feb. 18th, at 8 P. M., the lecture to be upon the subject, "The Use of the Roentgen Ray in a Revision of the Laws Relating to Child Labor and Education."

Dr. Prentiss Willson spoke of the number of small societies in the city the members of which are also members of the Medical Society, and the difficulty of arranging dates of meetings so as to avoid conflicts. As the ANNALS is a publication going to practically all concerned, he suggested the desirability of publishing a list of the meeting dates of such small societies in that journal. Dr. D. S. Lamb, for the Editorial Committee, said that the ANNALS would gladly publish the dates of meeting for any societies furnishing the necessary information.

The Chair instructed the Secretary to communicate with the George Washington University authorities with a view to getting relief from the annoyance of a gas engine in the basement.

Dr. D. S. Lamb presented a specimen of *Ainhum*.

This specimen was sent to the Army Medical Museum from Manila, P. I. It was from a negro who was born in Jamaica, B. W. I., and lived there till 15 years old; afterwards worked on Pacific steamers. First noticed the disease in 1903, when the constriction began to show and the toe began to pain. The toe was removed in 1908; the bone had disappeared. The other little toe was also affected. In this case tactile sensation in the affected toe was almost entirely absent; besides this, the knee jerk was absent; the pupillary reflex for light was absent; Romberg's sign was present. This was all the history. The name *ainhum* was from a native word that meant "to saw." The disease was first described in 1860; many cases have been ob-

served, especially in Africa, the East and West Indies and in Brazil; almost all in the dark races. The disease was chronic, lasting from five to ten years. The size of the affected part usually increased because of fatty deposit. The muscles, and even the bone might disappear by absorption. The little toe was that usually affected, but any other toe, or even the fingers, might be. The etiology and pathology were in dispute.

Dr. Copeland read a Review of Pediatrics. Discussed by Drs. Acker, Tayler-Jones, A. F. A. King, Chappell, G. L. Magruder and Copeland. See p. 48.

Dr. Dunlop read a paper upon "Relaxation of the Sacro-iliac Synchondroses." Discussed by Drs. Shands, I. S. Stone, Erving, Wellington, Egbert, J. D. Thomas, Macatee and Dunlop.

Dr. J. D. Thomas called attention to the efforts being made by representatives of the American Medical Association to secure sufficient subscriptions to raise a mortgage of several thousand dollars which rests upon the house left by the late Dr. James Carroll to his widow. A pension of \$125 per month was granted by Congress, but as Dr. Carroll left a large family of children and an aged mother, the pension did not suffice to discharge the indebtedness upon the house. As the representative to the A. M. A. for the District of Columbia, he appealed for subscriptions from the local profession.

WASHINGTON MEDICAL ANNALS.

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EDITORIAL COMMITTEE.

D. S. LAMB, A. M., M. D.,	<i>Chairman,</i>	2114 Eighteenth Street, N. W.
CHAS. S. WHITE, M. D.,		The Farragut.
BENJ. G. POOL,		945 Rhode Island Avenue, N. W.

Editorial.

FINAL NOTICE TO MEMBERS.—The History of the Medical Society is now in press.

Members who desire to have their photographs reproduced in this History but have not yet furnished them to the committee, have still an opportunity, provided that the photographs are received at an early date.

Members who have not yet furnished the committee with their personal sketches have still a short time in which to attend to

that matter. Such histories should state, more or less, the following facts: full name; date and place of birth; degrees, including date, character, and the institution by which conferred; army and navy and marine-hospital service; hospital connections; college connections; marriage, date and to whom; anything else of interest, especially medical and civic. The committee reserves the right to edit the sketches as the occasion demands.

Communications should be addressed to the Chairman of the committee, Dr. D. S. Lamb, 2114 Eighteenth Street, N. W.

THE MEDICAL SOCIETIES OF WASHINGTON.—*The Hippocrates Society*, the object of which is "the cultivation and promotion of knowledge in whatever relates to the science of medicine and surgery," will meet as follows: March 11th at Dr. Brandenburg's, 1101 Fourteenth Street, with Dr. Chas. M. Beall as essayist; March 25th at Dr. Edgar Snowden's, Connecticut Avenue and Q Street, with Dr. E. P. Copeland as essayist, and April 8th at Dr. J. B. Rogers', 721 Eighth Street, with Dr. Taylor B. Dixon as essayist. The membership in this Society is limited to 25. The President for this season is Dr. D. G. Smith; Secretary, Dr. J. H. Holland.

The Therapeutic Society of this District meets on the second Saturday of each month at the rooms of the Pharmaceutical College, 808 I Street, N. W. The officers for the present year are as follows: President, Dr. Noble P. Barnes; Vice Presidents, Maurice E. Miller and Dr. Arthur J. Hall; Secretary, Dr. S. R. Karpeles; Treasurer, Dr. Thos. J. Rossiter; Librarian and Curator, Dr. Benj. G. Pool; Council, Drs. N. P. Barnes, D. Olin Leech, Edwin L. Morgan, B. G. Pool and Henry A. Robbins.

Other societies, desirous of being noticed in the ANNALS, will please send notice of meetings, etc., to the Chairman of the Editorial Committee.

THE ST. LOUIS MEDICAL SOCIETY requests that members of the Medical Society of this District send reprints of their articles to the Secretary of that Society.

LICENSES OF PHYSICIANS.—Licenses of the following physicians, issued by the Board of Medical Examiners of the Medical Society prior to 1896, have been turned over to the Historical Committee by the Corresponding Secretary. They can be obtained by those who are entitled to them by addressing the Chairman of the Committee at 2114 Eighteenth Street, N. W.

Allen, Maxwell H.	Guzman, Horatio	Pyles H. V.
Atlee, Wm. A.	Heitmuller, Geo. H.	Reed, Elizabeth B.
Barr, Samuel D.	Herman, Meyer	Riley, T. G.
Bates, Mary E.	Hicks, John R.	Ross, Raphael H.
Bennett, H. M.	Hoffman, Wm.	Rothrock, Addison M.
Bettes, Eugene	Hutchinson, Mahlon	Schenkelsop, O. W.
Bidwell, Walter D.	Kalusowski, H. E.	Shoup, Jesse T.
Briard, W. H. L.	Kauffman, Henry B.	Sillers, Robt. F.
Carter, Edw'd P.	Kurtz, John	Simpson, Edw'd P.
Carter, M. B.	Leclercq, Fred	Simpson, John C.
Caufield, Hermann	Leonard, Benj. F.	Sloggett, H. C.
Chaney, Eugene	Marbury, Chas. C.	Sprague, John T.
Clark, George C.	Marmion, Geo. A.	Stevenson, Geo. E. P.
Coffron, W. H.	Marvel, Philip	Story, Jacob J.
Crockett, M. A.	Mason, Robt. F.	Stub, Arnold
Crosson, H. J.	Mazzei, Francis A.	Thompson, S. B.
De Ford, W. H.	Morton, N. Bowditch	Tucker, Wm. P.
Demarest, C. L.	Parker, Edw'd M.	Van Dyke, J. M.
Dow, J. L.	Parsons, Alfred V.	Vassalli, John
Draper, Frank F.	Peck, Melvin D.	Warren, Stanley S.
Emmons, Chas. M.	Perkins, Edw'd D.	Weaver, Clarence A.
Ford, Wm. C.	Piper, Edw'd W.	Whitney, Walter
Gatchell, Wm. F.	Porter, Henry R.	Williams, Francis H.
Glasgow, S. McP.	Portman, A. E.	Woollen, T. T.
Groce, L. Marie	Purcell, McDaniel	

The XVITH INTERNATIONAL MEDICAL CONGRESS.—Secretary-General, Professor Emil Grósz, M. D.—Office, Budapest, VIII, Esterházy-uteza 7.—In accordance with the resolution passed at Lisbon on the 26th April, 1906, the XVIth International Medical Congress will be held at Budapest from the 29th August till the 4th September, 1909, inclusive.

CLINICAL LECTURES ON DISEASES OF THE SKIN.—A series of lectures on this subject will be given by Dr. L. Duncan Bulkley, of New York City, on Wednesday afternoons at 4.15 o'clock, beginning March 10th, at the New York Skin and Cancer Hospital, Second Avenue, corner Nineteenth Street, New York.

ATROPINE AS A HEMOSTATIC.—A letter has been received from Dr. Wm. F. Waugh, reading as follows: "I am collecting material for a paper upon atropine as a hemostatic, and would be obliged to any of your readers who would send me notes of their experience with this remedy. I am particularly anxious to receive adverse reports, as well as those favoring the remedy." Replies should be addressed to him at 1424 East Ravenwood Park, Chicago, Ill.

EXCHANGES.

Annals Gynecology and Pediatrics.
Buffalo Medical Journal.
California State Journal of Medicine.
Colorado Medicine.
Cronica Medica Mexicana.
Journal Kansas Medical Society.
Journal Medical Society New Jersey.
Journal Michigan Medical Society.
Journal South Carolina Medical Association.
Louisville Monthly Journal Medicine and Surgery.
Maryland Medical Journal.
Modern Medicine.
Monthly Cyclopedia and Medical Bulletin.
New York State Journal Medicine.
Northwest Medicine.
Old Dominion Journal.
Pacific Medical Journal.
Pathologica, Genoa.
Proctologist.
Providence Medical Journal.
Quarterly Bulletin Northwestern University Medical School.
Texas State Journal Medicine.
West Virginia Medical Journal.

PUBLICATIONS RECEIVED.

Annual Report of Surgeon General U. S. Navy, for 1908.

Collection of Reprints of St. Louis Medical Society.

Archivos do real instituto bacteriologico camara pestana, Tom. II, Fasc. II, Dec., 1908; Lisboa.

C. S. Ludlow, "Mosquitoes of the Philippine Islands;" 1908.

Twenty-second Annual Report Washington Hospital for Foundlings.

Jour. Camden Co. Medical Society, N. J.

American Health, Jan., 1909.

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Johns Hopkins University Circular.

Bulletin No. 46, Hygienic Laboratory, U. S. P. H. and M. H. S.

R. T. Edes, "On the diagnosis of some functional diseases;" reprint.

W. R. Brinckerhoff, "The present status of the leprosy problem in Hawaii." "The reaction of lepers to Moro's percutaneous test." "A note upon the possibility of the mosquito acting in the transmission of leprosy"; published by the U. S. P. H. and M. H. S.

G. E. Shambaugh, "Membrana tectoria and the theory of tone perception." "Structure and function of epithelium in sulcus spiralis externus." "Construction of the ethmoidal labyrinths"; reprints.

I. S. Haynes, "Anatomical basis for successful repair of the female pelvic outlet"; reprint.

MEMBERS who desire the return of their photographs will address the Chairman of the Committee on History, Dr. Lamb, at 2114 Eighteenth Street, N. W.

Medical Miscellany.

Mercury in the Treatment of Tuberculosis.—Wright, in *U. S. Naval Medical Bulletin*, for January, 1909, page 46, writes further in regard to its use. He believes that mercury acts as a tonic, increasing the vitality of the cellular elements of the tissues, and that it renders the blood bactericidal, producing an antitoxin

therein that is directly destructive to the tubercle bacillus. The action is cumulative and lasting; the patient gradually acquires an immunity, and then the dose of the mercury can be diminished. The drug should never be used to the point of salivation. He gives details of dosage. He writes from the U. S. Naval Hospital, Las Animas, Colo.

Sewer Air.—An editorial in the *British Medical Journal*, Nov. 7, 1908, page 1456, discusses the work done lately in examination of sewer air, especially the work of Dr. Andrewes and Dr. W. H. Hurlley and Major Horrocks, at Gibraltar. The editorial concludes as follows: "These observations appear to possess very considerable practical importance for the medical profession, inasmuch as they prove that microbes in sewage flowing through sewers or drains under ordinary conditions can find their way into the drain air and be carried by it to considerable distances in a direction determined by the ventilation current, which, it may be observed in badly planned or constructed drains, is not always in the desired direction."

Sewer Air.—Haldane, in *British Medical Journal*, Nov. 14, 1908, page 1521, from experiments made by him and Prof. Car-nelley, in London, Bristol and Dundee, concluded that fewer organisms are found in sewer air than in the air outside; the majority of those found in sewer air came from outside through ventilators. Only under two conditions were organisms given off from the sewage, namely, where there was splashing, and from bubbles rising through the sewage. He thinks that the risk of infection through sewer air is practically infinitesimal.

Caring for the Mothers of Infants (*Medical Standard*).—A Frenchwoman had taken notice that in the case of expectant and nursing mothers who were financially not well enough situated to command sufficient nourishing diet, the infants died prematurely or were more or less diseased; and, accordingly, she opened a restaurant in one of the poorest quarters of Paris where such mothers could get a satisfactory meal without charge. Other somewhat similar institutions have also been opened in Paris. In many provincial towns in England also schools for mothers have been inaugurated, and in some the French restaurant plan has been followed; several in London, in which also babies are weighed and inspected and advice given. In one place in London the society has provided, besides the school for mothers and infant consultations, dinners for the mothers, a system of home visiting and conferences with the fathers; the idea is to combat the ignorance that prevails among the women of the working class with regard to the rearing of children, and especially to impress them with the great advantage of breast feeding.

The Relation of Avian to Mammalian Tuberculosis.—Max Koch and L. Rabinowitsch, in *Virchow's Archives*, publish an account of their studies in avian tuberculosis. They claim that the avian form of tubercle bacilli is only a modified form of the family of tubercle bacilli, which has become adapted to the species from an origin common to it and mammalian forms. The disease affects the abdominal organs and the lungs; the ultimate change wrought by the tuberculous process differs from that produced in mammalian tuberculosis in several particulars, and they apply to it the term "necrotic substance;" it is comparable to the caseation of mammalian tuberculosis. To a great extent the disease is caused by feeding with infected material; especially from eating rats and mice. The authors failed to infect hens with mammalian bacilli, but feeding with bacilli of bird origin readily led to infection.

Carcinoma of the Vermiform Appendix in Child 9 Years Old.—Reported by Drs. Day and Rhea, Boston; in *Boston Med. and Surg. Jour.*, December 3, 1908, page 748.

A Controllable Artificial Anus, Perineal Excision of the Rectum, with Studies on Surgical Anatomy, including an Anatomical Approach to the Base of the Bladder.—Wm. C. Lusk, M. D., New York.

The case reported is one of an ulcerated tumor near the anal margin, believed to have been an epithelioma, but examination subsequent to the operation did not substantiate this diagnosis.

An incision two inches long was made parallel and one and a half inches internal to Poupart's ligament, the aponeurosis, muscle fibers and peritoneum being divided in the same line. All the slack in the sigmoid was drawn through this wound. A transverse slit was made through the skin and fascia just above the level of the anterior superior spine, and the bridge of tissue between this and the lower wound was raised from the aponeurosis. Two clamps were placed on the bowel, division being made by a Paquelin cautery. The distal end was closed and dropped back in the abdominal cavity. The proximal end was drawn, by means of the clamp, under the bridge of tissue and sutured in place. Symptoms of obstruction were manifested in thirty-six hours. The clamp was loosened and reapplied after a tube was inserted into the bowel. Six days later the rectum and right inguinal glands were excised. The artificial anus has been perfectly controllable, as regards gas and feces, with a suitable truss. There has been no prolapse of the mucous membrane. The closed undrained segment of bowel was innocuous thirteen months later.

Lusk devotes considerable space to a number of reproductions from dissections, and the descriptive surgical anatomy is excellent.—C. S. W.

Light in Schoolrooms (*Annals of Gynecology and Pediatrics*).—Massachusetts by law requires that every year the teacher shall test the vision of every child, and parents are notified of defects. If the parents fail to attend to the matter the nurse takes the child to a competent physician for examination and prescription.

Contraindications for Abdominal Massage.—Boas in *Zeit. f. physik. u. diät. Therapie*, April, 1908 (see *Modern Medicine*, January, 1909), states that the inconsiderate massage of the abdomen may stimulate a latent intestinal cancer to rapid growth and metastasis; dormant gastric ulcers may be awakened to harmful activity. If the stools contain occult blood the massage is contraindicated. A history of cardialgia at any time, especially before or after pregnancy, increases the probability of gallstone trouble.

The Use of Fruit as Food and Remedy.—Colliere, in the *Revue de Therapeutique Med. Chir.*, 1908 (*Modern Medicine*, January, 1909), says that the exclusive use of fruit is equal to meeting the daily expenditure of energy, including the necessary albumin. A fruit diet can easily furnish 110 grams of albumin, 60 grams of fat and 420 grams of carbohydrates, which is more than twice the albumin necessary. Chemical composition varies a little, according to the nature of the fruit. Farinaceous fruits are rich in carbohydrates and the oily fruits in fats. Aciduous fruits, taken before meals, are a good aperient. A fruit régime, therefore, is recommended in patients with neurasthenia and arthritis.

Dermoid Cyst of Kidney.—At the meeting of the Southern Surg. and Gynecolog. Association, December 15-17, 1908, Dr. Goldsmith, of Atlanta, Ga. (*Jour. Amer. Med. Assn.*, January 9, 1909, page 161), reported a case of this rare condition. A man, age 20, had had from time to time pain in right lumbar region; later he had hematuria. An exploratory operation discovered a large semi-solid tumor at upper pole of kidney. Nephrectomy was done and he recovered without event. Goldsmith states that only two other cases are on record, namely, one reported by Paget in 1853, the other by Haekel in 1902.

Water Drinking in Childhood.—Barbour, in *New York Med. Jour.*, February 8, 1908 (see *Modern Medicine*, January, 1909), urges that infants and children be given enough water to drink. Holt and Jacobi have shown that a child requires, in proportion to its weight, from six to eight times as much water as an adult. Frequent vomiting in children can often be controlled by a small quantity of water. A glass of water every twenty-four hours is not too much for an infant several months old. It is a mistake to offer infants food often when in reality they want water.

Experiments with Extracts of Leucocytes.—Hiss and Zinsser have been making researches with extracts of leucocytes, testing the action of the dissolved leucocytes on various infections. The leucocytes were usually obtained from the pleural cavities of healthy rabbits which had been treated with aleuronat for twenty-four hours. In the exudate thus obtained the leucocytes were freed from serum and the extracts were made by means of distilled water. These extracts were used in infections by staphylococcus aureus, typhoid, pneumococcus, streptococcus, meningococcus and Asiatic cholera. In all cases the animal was cured, or the symptoms were improved or death was delayed longer than in the control animals. The extracts were also used in human patients who had meningitis or pneumonia, and in all cases were beneficial. The authors conclude that the favorable action of the extracts was due to its power to neutralize the circulating toxins and not to any phagocytic, lytic or opsonic action.

The Plague Among the Ground Squirrels.—Wherry, of the San Francisco Board of Health, in the *Jour. Infectious Diseases*, Dec. 18, 1908, page 505, states the results of his investigations into this matter. Plague is known to occur in these animals, and has been known to occur in those found in California; and the relation between the squirrel plague and the origin of cases in man has been demonstrated.

Leprosy in Rats.—Wherry also, same journal, page 513, has investigated this subject, and concludes as follows: Flies take up enormous numbers of lepra bacilli from the carcass of a leprous rat and deposit them with their feces; in this way the disease may be communicated to man.

Typhlitis and Perityphlitis.—Lyons, of Chicago, read a paper before the Association of Obstet. and Gynecol.; published in *Amer. Jour. Obstetrics, &c.*, January, 1909. On page 90 he gives his conclusions: Typhlitis and perityphlitis can occur independently of appendicitis; the latter sometimes occurs secondary to these diseases. One may have appendicitis without the mucosa of the appendix being the seat of primary inflammation. A catarrhal inflammation of the cecum may cause a similar condition in the appendix, from which may follow periappendicular disturbances. Appendicitis may result from primary typhlitis. The appendix is often affected from a diseased cecum.

Purin-free Diet; Its Limitations.—A correspondent of the *British Med. Jour.*, Dec. 12, 1908, says that some nine years ago he read Dr. Haig's work on uric acid, and as his general health was bad he began to give Haig's dietary a trial. For two years he adhered to the Haig plan; all his symptoms speedily disap-

peared; at the end of the second year he felt better than ever before, was conscious of a feeling of well-being previously unknown to him. He still feels that way, except when he "sins" dietetically. On rare occasions he dines out or takes a holiday, and then it is difficult to be dietetically virtuous; but invariably at the end of the holidays which, except for dietetic errors, are more healthful than his usual life, he never feels as well as when living at home on his customary Spartan fare. He still hankers after the fleshpots and his memory dwells with pleasure on many a gastronomic feat, but the improvement in his health and in his endurance are such that nothing would induce him to revert to his former dietetic habits.

Alcoholism; its Dangers.—A poster with this heading is put up in every public hospital ward and on every prescription blank of the hospitals and dispensaries of Paris. Then follows quite a lengthy statement of the evils of the use of alcohol. Peterson, of New York City (*N. Y. Med. Jour.*, December 26, 1908, page 1207), has condensed the same and placed the condensed statement on his prescription blanks, as follows:

Alcohol is a poison.

It is claimed that alcohol is a food. If so, it is a poisoned food.

The daily regular use of alcohol, even in moderation, often leads to chronic alcoholism.

One is poisoned less rapidly by the use of beer than by drinking wine, gin, whiskey and brandy.

Alcohol is one of the most common causes of insanity, epilepsy, paralysis, diseases of the liver and stomach, dropsy and tuberculosis.

A father or mother who drinks, poisons the children born to them, so that many die in infancy, while others grow up as idiots and epileptics.

Chylous Ascites in an Infant 16 Days Old.—Kerr, of Brooklyn, N. Y., in *N. Y. State Jour. Med.*, Jan., 1909, page 14, reports a case, apparently the youngest case by far on record, and which recovered.

Leprosy in Hawaii.—Brinckerhoff, Director of the Leprosy Investigation Station, Molokai, makes a report published by the U. S. P. H. and Marine H. S., 1908. Lepers were first sent to the island of Molokai in 1866, for segregation there. About 6,000 cases thus far have been sent. Of native Hawaiians 2.5 per cent. are lepers. The disease is almost exclusively a disease of the natives, and is on the increase. Of 460 cases tabulated, the youngest was 5 years old, the oldest 75 years; average age at time of apprehension 29.6 years; 65.5 per cent. males, 34.5 per

cent. females. "In the present state of our knowledge we must assume that leprosy is infectious during the whole of its course." There is a widespread belief among the Hawaiians that the disease is transmitted by sexual intercourse. Cases are concealed for years. The Board of Health has made the leper settlement as comfortable a place to live as there is on the islands, but the knowledge of this fact is but slowly disseminated through the native population. Leprosy is increasing among the Portuguese and Japanese in the islands; much of this is probably due to importation.

The percutaneous tuberculin test of Moro is not of any value in the differential diagnosis of leprosy and tuberculosis. It is possible that the female *Culex pipiens* may act as a carrier of leper bacilli from lepers to well persons. The probabilities are that the mosquito does not "function" in the transmission of the disease.

Flies as Agents in Disseminating Tuberculosis.—Andre, in the "Trans. Congress Tuberculosis," September 30, 1908, as the result of experiments, concludes that flies that are fed on tuberculous sputum excrete many bacilli; these appear in the excretion six hours after ingestion of the sputum and some may be found as long as five days later; during this time the flies can carry the bacilli to a great distance and contaminate food. Food so contaminated causes tuberculosis in guinea pigs. Flies readily take up bacilli from dry dust. Flies caught at random in a hospital ward caused tuberculosis in the guinea pig. The sputa and feces, therefore, of tuberculous subjects should be disinfected; the flies destroyed as soon as possible; food stuffs should be covered with wire gauze.

The Cruise of the Atlantic Fleet.—Annual report of Surgeon General of Navy, for 1908. (See page 109 *et seq.*) It was necessary to provide medical stores and supplies for at least one year's cruise. Consideration had to be given to the fact that many hospitals *en route* were too small to accommodate the probable number of sick. Many men were new to the service and untrained in the care of themselves in strange communities. Unfortunately, there was no accompanying hospital ship, although the Bureau of Medicine of the Navy had seen the necessity for one and had asked for it. But the request was not approved. The conditions would have been especially serious in case of an epidemic of a contagious disease. There was yellow fever at Trinidad.

Cases of cerebro-spinal meningitis, diphtheria, typhoid fever and scarlet fever appeared. In the absence of a hospital ship the Admiral found it necessary to detach two ships of the fleet to take charge of the seriously ill. While the general health of the deck

force steadily improved, that of the engineer force was impaired; especially a marked mental change was observed which in two cases terminated in insanity. The cruise demonstrated that the sick quarters of individual ships were inadequate to meet the ordinary needs when cruising out of reach of hospitals.

Illuminating-Gas Poisoning.—Dr. Glenn I. Jones, Washington, D. C. *Amer. Jour. Med. Sciences.*

Jones directs attention to the increased percentage of carbon monoxide in the newer methods of gas manufacture. In the coal gas of a few decades ago the CO was about 7 per cent., while the present water gas contains 45 per cent. carbon monoxide. Naturally, the toxicity has likewise appreciated. Statistics from many leading cities show a decided increase in the death rate, both suicidal and accidental, from illuminating gas. In New York City alone there were more than twice as many deaths in 1906 than in the twelve years from 1880 to 1892. In the symptomatology especial stress is placed upon pulmonary edema, broncho-pneumonia, pleurisy and atelectasis in the fatal cases. The blood changes were pronounced, and consisted essentially of reduction of the red cells, polychromatophilia, poikilocytosis, color index minus, specific gravity and coagulability increased and a leucocytosis varying from 9,000 to 22,000. The treatment offers special difficulties in that the affinity of CO for hemaglobin rapidly forms such a stable compound that oxygen will not liberate and replace the CO. Jones believes that oxygen inhalations are of little value and that the best results can be obtained by bloodletting and the intravenous or subcutaneous use of salt solution, with appropriate stimulation.—C. S. W.

Standish, in Ophthalmology (*Jour. Med. Soc. New Jersey*, Feb., 1909, page 468), gives the following as the essential factors in the proper lighting of school rooms:

1. The walls should be painted a very light color, preferably an exceedingly pale green or buff.
2. The wooden finish of the room and desks should be light in color.
3. The window shades should exclude the direct light of the sun, diffuse daylight freely, and in the evening should reflect a generous proportion of the light that falls on them.
4. Direct illumination is desirable.
5. The lighting stations should be arranged so that no annoying shadows fall on the pupil's desk.
6. The newer forms of incandescent lamps and Zalinsky shades, when properly arranged, can give a candle foot illumination of 2.5 on each desk in the ordinary schoolroom.
7. In most cities the cost of electricity, used as above described, is not much more expensive than gas.

Tetany.—McCallum and Voegtlin, in *Jour. Exper. Medicine*, January, 1909, page 149, state the following conclusions as the result of their experiments: Tetany occurs spontaneously in many forms and may also be produced by the destruction of the parathyroid glands. When the destruction is complete, tetany appears, even in the herbivora. If the extract of parathyroid is introduced into the animal after the glands have been removed, tetany does not occur. In tetany there is, apparently, some disturbance of the composition of the circulating fluids, ordinarily prevented by the secretion of the parathyroids, which disarranges the balance of the mineral constituents of the tissues. Such tetany may be relieved by extensive bleeding and replacement of the blood by salt solution. No actual poisonous material has been demonstrated by transferring the blood of a tetanic animal to the veins of a normal one. Tetany may be regarded as an expression of hyperexcitability of the nerve cells due to removal of the calcium salts, and this excitability can be relieved by the use of the calcium salts. Sodium and potassium salts have no such effect.

The experiments showed that removal of the parathyroids was followed by a marked reduction in the calcium content of the tissues, especially of the blood and brain; an increase of the salt in the urine and feces; an increase, also, of nitrogen and ammonia in the urine and an increase of ammonia in the blood.

Oysters and Typhoid Fever.—The investigations (*Maryland Med. Jour.*, March, 1909, page 129) made by the Virginia State Dept. of Health by request of the Virginia Oystermen resulted as follows: Oysters in their natural beds are usually wholesome, and nearly all the danger from eating raw oysters is due to the custom of "fattening." The process of fattening consists in removing the oysters to fresh water. They then become larger, paler and heavier. Open sewers are generally the most convenient places. It is desirable to prevent the interstate shipment of fattened oysters. The oystermen are suffering a lessened demand for oysters because of the belief that they are a dangerous food.

On the Cold Storage of Poultry.—Boos, *Boston Med. and Surg. Jour.*, 1909, CLX, page 107, states that the Mass. State Board of Health has investigated this subject and made a report (39th Annual Report, 1907). The conclusion reached is that it practically makes no difference whether poultry is drawn or undrawn, but it should be perfectly fresh when placed in storage. Boos, however, calls attention to the fact that poultry removed from the storage must be thawed out before using and that dealers usually do the thawing by placing in water; and that after placing many birds in the same water there are probabilities of

infection or of ptomains and, consequently, of danger to the consumer. He recommends that all poultry be drawn before being placed in cold storage, and that this drawing include the removal of the entire alimentary canal and its attached glands.

Book Reviews.

A HANDBOOK OF SUGGESTIVE THERAPEUTICS, APPLIED HYPNOTISM, PSYCHIC SCIENCE. By HENRY S. MUNRO, M. D. Second Edition. C. V. MOSBY, St. Louis, Publisher.—For the practical application of psycho-therapy one will find in this book of nearly four hundred pages some interesting and instructive data. The author has very wisely given us to understand in his preface that no attempt has been made to build up a purely scientific work. "To make this book practical and easy of assimilation has been my constant aim," he tells us. The chapter on "Suggestion: Its Uses and Abuses" is especially worthy of commendation. Here the real dangers of so-called Christian Science, patent-medicine vendors, advertising quacks, &c., are well portrayed. The chapters on "Suggestion Without Hypnotism," "Hypnotic Suggestion" and "Training the Subconscious Self," will, in the main, be of much value to the general practitioner seeking truth along those lines.

The authors' treatment of the subject, "Philosophy and Religion and their Relation to Health," would appear to be most unfortunate. While it is unquestionably true that "The psychical correlation between religious emotion and the animal passions is now recognized," we cannot for a moment subscribe to the following from Dr. M.'s pen: "To speak plainly, the effect (of religious excitement) upon the entire individual is identical to that of excessive sexual intercourse, and it is questionable if the results upon mind and body of sexual prostitution are not even less injurious. * * * It is horrible to contemplate, but there are thousands of ardent female religious devotees whose psychic life is so dominated and controlled by their church executive, or 'spiritual adviser,' that their husbands find no more place in their higher nature than a dog finds comfort upon the grave of his buried master." The writer feels it his duty to state that even the originators of the "Emmanuel Church Movement," who have had probably more practical experience than any others with the various forms of religious emotion, stand absolutely opposed to the theory of Dr. Munro upon this subject. The Rev. Dr. McComb, of Emmanuel, after carefully weighing

the statement of Dr. M., writes me as follows: "The statement, so far as my experience goes, has *no basis in fact*. * * * There is no religious practice among Christians today, that I know of, which can possibly have the evil effect mentioned by Dr. Munro."—WM. L. ROBINS.

EXCISION OF THE RECTUM FOR CANCER. — WM. C. LUSK, M. D., New York.—This exhaustive article (112 pages) deals with the various methods of approaching the rectum for complete extirpation. The importance of the early diagnosis is emphasized. While numerous methods have been utilized, Lusk classifies them as follows:

I. Close local excision of the rectum alone.

II. Wide local excision of the rectum, uterus and part of the vagina, *en masse*, by the combined posterior and abdominal route.

III. Wide local excision of the rectum, uterus and part of the vagina, *en masse*, entirely by the abdominal route.

IV. Wide radical excision of the rectum, uterus and part of the vagina, *en masse*, and removal of regional glands, entirely by the abdominal route.

The surgical anatomy is clearly described and amplified by thirty-eight photographs from dissections, each accompanied by a diagrammatic drawing. Altogether, the reprint is the most comprehensive exposition of this subject that has come to our notice.—C. S. W.



WASHINGTON MEDICAL ANNALS

SMALLPOX AS I HAVE SEEN IT IN THE DISTRICT OF COLUMBIA.*

By LLEWELLIN ELIOT, A. M., M. D.,

Medical Inspector, Health Department,

Washington, D. C.

Smallpox is a disease which does not confine itself to the poor and the lowly, nor does it depend upon the presence of filth and dirt for its origin or spread. It respects neither sex nor age, neither race nor nationality. The palace is attacked with the same virulence as the hovel, for we read in history of the following notables who have suffered its ravages and recovered: Francis Hercules, Duke of Alençon; Mirabeau, who, upon his recovery, was described as "a tiger who has had the smallpox;" William Thompson, who in 1746, after recovery, published a poem describing smallpox; Madame de Bonchamp; Henry VIII; Lord Darnley, who afterwards married Mary, Queen of Scots; Beethoven; Queen Anne, of England; Peter III, of Russia; Louis XIV, of France; William III, of Orange; Queen Maria Theresa, of Austria; George Washington, during his early manhood; and Andrew Jackson, while a sailor, in early life. The White House has been visited on two occasions: first, in 1833, when the coachman of President Jackson was stricken, during which illness President Jackson himself performed the office of attendant until all danger was passed; the second time, in 1864, when it was reported that President Lincoln was the victim of an attack of varioloid. To equalize matters, smallpox broke out in the house of Jefferson Davis, the Southern President, in Richmond, in February, the same year.

* Read before the Medical Society, December 9, 1908.

The following were attacked by the disease and died : William II, of Orange; Emperor Joseph I, of Austria; Louis XV, of France; two children of Charles I, of England; a son of James II, of England; his daughter, Queen Mary, and her uncle, the Duke of Gloucester; the son of Louis XIV; Louis, Duke of Burgundy; the Dauphin, his wife and their son, the Duke de Bretagne; Peter II, the Emperor of Russia; Henry, the Prince of Prussia; the last Elector of Bavaria; two German Empresses; an Elector of Saxony; the Queen of Sweden; Queen Mary, wife of William III, of Orange; an Emperor of Mexico; Lord Hastings; and two children of Madame de Bonchamp.

It would be folly to attempt to mention the names of the physicians who have been attacked by this disease.

My association with smallpox began in 1879, although I had previously seen many cases, and it has continued until the present time, with few interruptions.

The mortality attending my early service, as well as my official position under the Government, induced me to make a study of what might in time fall to my charge. In this way my mortality rate of 100 per cent. has been reduced to 3.25 per cent., and the only reported case of recovery from an attack of the hemorrhagic variety is credited to the District of Columbia, and was under my care.

The smallpox hospital for more than fifty years has been located in Reservation No. 13, back of the Washington Asylum, the United States jail, and the work house, with the old potter's field ever in front of it.

In my recollection there have been three hospitals: the first a two-story frame structure, situated near the banks of the Eastern Branch; the second one a one-story frame building, situated on a rising plot on the B and Twenty-first Street lines of the Reservation; the third one, a one-story brick building, with a separate administration building, situated in the valley, near the river banks.

The first and the second hospitals had no special provision for the medical attendant, while in the administration building of the third, the medical attendant, the nurses and the other employees are quartered.

With the first hospital I am not familiar; my recollection is vague, although I was there several times; with the second one

I am very familiar, for it was there that my first service as a physician began. It had two wards, with a central building; each ward was about 65 feet long, 30 feet wide and about 20 feet high; there was a room about 10 feet square at the end of each ward for the use of the nurse; in the central building there were four rooms, the kitchen and the store rooms. Three rooms were for patients, the fourth was for the physician. In cold weather it was a difficult thing to maintain an equable temperature. By crowding, about forty beds could be placed in each ward, two in each private room, four in the hallway and two in each nurse's room, making a total capacity of ninety-four beds. This, of course, did not afford the proper air space; it was a question of affording shelter and isolation and not air space or heat. Along the roof of each ward was a wide, high and long ventilator, such as was seen in army hospitals, and so open was this ventilator that on many occasions snow had to be swept from the middle of the ward and from about some of the beds. Did patients die under such conditions? Of course, some of them died; it made no difference then, for smallpox was a death warrant; it is a wonder some of the doctors did not die too. This hospital was erected during the outbreak in 1871, and was destroyed by official orders, by fire, in 1904. In front of the hospital, possibly fifty feet away, was a small house, 10 by 6 feet, for the visiting physician to change his clothes and wash his face and hands.

In the present hospital all these things are different. There are comfortable accommodations for the physician, the nurses and the other employees; bath rooms and toilets are provided; there is a well-stocked drug room; these are in the administration building. The hospital has four wards, three private rooms, three bath rooms, toilets, two kitchens and store rooms. The heating system is steam. At the hospital the disinfection for smallpox is done. A steam apparatus with the formaldehyde-ammonia attachment is installed; this is for material brought for disinfection, while an air-tight formaldehyde box is for the disinfection of bedding and other material in use at the hospital.

Aside from the names accepted by the profession, smallpox has masqueraded as "giant chicken-pox," "prairie itch," "the scratches," "elephant bumps," "the digs," "Cuban itch," and other names which I do not recall, but "a rose by any other name would smell as sweet."

Smallpox may be varioloid, discrete, semiconfluent, confluent, or hemorrhagic.

Varioloid is seldom fatal; the discrete form will prove fatal in about 8 per cent. of cases, while the semiconfluent and confluent will generally have a mortality rate of 45 per cent. in the unvaccinated. The hemorrhagic is almost invariably fatal in a few hours or a very few days.

The names given to the different varieties are expressive of their character, but blood thrown out into the pustule does not necessarily mean hemorrhagic smallpox, and thereby a death warrant. In the hemorrhagic variety blood escapes from the mouth, the eyes, the urethra, the vagina and the rectum, into the skin, the sclerotics and the mucous membranes; the skin may be discolored in large plaques, or the entire surface of the body may be covered with ecchymoses.

When death occurs in smallpox it is usually upon one of the critical days—the ninth, the eleventh, or the thirteenth day.

The eruption may be so mild in character and the number of points of eruption so few that the symptoms may pass unnoticed; on the other hand, their number and character will make it impossible to mistake this for any other disease. The histories of epidemics in this, as well as in other countries, at times, however, prove the unfamiliarity on the part of physicians with the disease, and throw great discredit upon the medical schools from which they have graduated. Few physicians have the opportunity of studying smallpox at the bedside, and, unfortunately, to the discredit of some, many cannot appreciate the knowledge they should imbibe from the visits and lessons. It is to be hoped that medical schools will, in the future, insist upon students visiting smallpox cases, when such cases are available for such visits, for the exigencies of medical practice may bring them into direct contact with such patients at any time. A mistake may prove disastrous to patient, the family, the community, and also wreck the future of the physician. Illustrations by photographs, by lantern slides, by word of mouth, examination through the window pane, will not take the place of the actual touch and observation of the patient. During my service the Smallpox Hospital was always available for physicians and students.

The infection of smallpox is through association with those sick of or exposed to the disease, or through handling books,

papers, clothing, bedding and other matters infected, by persons not protected by a vaccination or a previous attack of the disease. Rummage sales should be prohibited unless every article offered for sale has been disinfected to the satisfaction of the health authorities of the municipality. The infection of this disease is also contained in the exhalations, secretions and crusts, and has an indefinite life until it is destroyed by heat or chemical disinfection.

Smallpox is infective during the last half of the period of incubation, and the infection in a patient is active until the last vestige of scab has disappeared; therefore, according to my belief, smallpox can infect before there are any visible evidences of the disease. I do not believe in the aerial transmission of the *germ* of this disease further than a few feet from the patient, and I cannot conceive how it can be carried any distance through the open air without becoming so attenuated, that it becomes harmless; and, further, I think that those instances in which cases have occurred at a distance from the patient or a hospital are due to carelessness on the part of somebody in not exercising proper precautions. I have always thought and stated that cats, dogs, mice and flies may be carriers, and that this may account for the appearance of cases the origin of which cannot be traced; a mistaken diagnosis may also be responsible, and the attending physician and the inmates of the house be unconscious carriers. So the aerial transmission, in my opinion, is a myth and should be relegated to the scrap heap of medicine.

During the incarceration of Guiteau, in the United States jail, I saw scabs from smallpox patients, which had been sent him in sealed letters, destroyed by the warden; now, had Guiteau developed the disease, the aerial transmission theory would have been immediately brought into requisition to explain the matter, since the smallpox hospital was open at that time.

The diseases which cause hesitation and mistakes, after the appearance of the eruption, are varicella, syphilis, drug eruptions, impetigo and other forms of skin disease, especially those which show an eruption in the palm of the hand and on the sole of the foot.

Varicella will attack any part of the body—palms and soles, and mucous membranes—but it is found principally upon the trunk and other covered portions of the body. Its appearance

upon the scalp is common. It will attack the adult as well as the infant. It appears as a vesicle, and will pustulate only under the influence of outside infection and not from the same cause which results in the formation of a pustule in variola. Usually the patient is free from symptoms previous to the appearance of the eruption, but some have a stormy time during the twenty-four hours previous to its appearance. The vesicles of varicella are translucent, not having the hard character of the variolous; they rupture easily and do not refill after evacuation. The scars left after an attack of varicella are generally due to scratching.

Syphilis will frequently cause hesitation in diagnosis. The eruption here, however, lacks distinctness in outline, and a pustular syphilide is very seldom the first eruption seen, nor does syphilis appear as shotty papules, umbilicated vesicles and full pustules. Enlarged glands will aid in the diagnosis, but care must be exercised in reaching a decision. On several occasions I have spent more than an hour in the examination of a patient before I could positively determine the absence of smallpox and the presence of syphilis.

Measles will be a puzzle sometimes, but here the presence of photophobia, coryza and the almost pathognomonic Koplik spots are the distinguishing points.

Impetigo appears as a pustule in the beginning, becomes a yellow scab, and is without constitutional symptoms.

The iodides, the bromides, copaiba, iodoform, quinine and other drugs will produce an eruption which may be taken for smallpox, and smallpox may be treated for a drug eruption, but the history of the case usually clears up the diagnosis.

Before the appearance of the eruption, typhoid fever, pneumonia, meningitis, *la grippe* or general myasthenia may be suspected; in fact, I have admitted many patients who have been under treatment for some of the above diseases.

Smallpox may appear together with varicella, scarlet fever, syphilis, measles and other diseases.

The appearance of an eruption in the palms or on the soles does not always mean smallpox.

After the lapse of the period of incubation the individual will complain of a feeling of chilliness or he will experience a chill, with pains over the entire body, a soreness of the muscles; this chilliness may be continuous or the chill may be repeated; now

comes the headache, frontal or occipital; fever generally of a high degree; pain in the back, usually in the lumbar region, sometimes between the shoulders; pain in the abdomen or pain in the chest; vomiting or nausea may occur, as well as restlessness, anorexia, constipation, bad taste, offensive breath and inability to sleep. These symptoms will continue for forty-eight to seventy-two hours. On the third or fourth day an eruption appears, first as small red points more or less elevated, papular, with a degree of hardness, and not disappearing upon pressure. The papules appear first on the forehead along the hair lines, or upon the wrists, then on the chest, face and arms, finally to spread over the entire surface of the body.

My diagnosis is made from an analysis of the symptoms, usually obtained after the appearance of the eruption. Close questioning is frequently necessary before chill or chilliness, headache, vomiting, abdominal pains, thoracic pains, backache, pains in the calf of the leg, sore throat and fever are admitted antecedent to the eruption. In the majority of cases there is no known exposure admitted, although the patient may have been intimately associated with a case of smallpox. The character of the eruption is papular, becomes vesicular, the vesicles become pustules, the pustules become scabs and fall off, leaving scars, depressed to a greater or lesser extent.

The initial temperature is seldom less than 101.4, but it may be as high as 106; it is a sudden rise, and is continuous until the eruption appears, when a fall occurs. This fall, however, is not to the normal degree; the normal degree is reached later. The stage of suppuration will give rise to another elevation of temperature. I have seen the temperature as low as 96 and as high as 111; the last figure was in a case of the malignant variety. A high temperature does not always portend a fatal termination.

The pulse will sometimes fall to 46 and it will sometimes register 140, and the patients recover without complication or untoward sequelae.

The complications which I have seen are abscesses, metrorrhagia, mastitis, incontinence of urine, retention of urine, orchitis, opacity of the cornea, phlyctenulae of the cornea, rheumatism, hysteria, extreme debility, maniacal delirium, insanity, edema of the tongue, pneumonia and diarrhea. Pneumonia has been the most frequent and the most serious complication, while diarrhea

has caused much anxiety, and the maniacal delirium of a big, burly teamster made us wish to be elsewhere than in charge of the hospital.

On several occasions the delirium has assumed such a form that restraining straps became necessary as a final resort, after the attendants had become exhausted from their constant efforts to control the patient. Extreme care was always exercised in applying them. Patients in delirium of smallpox possess an incredible amount of strength in their demonstrations, but it wears away rapidly, leaving them perfectly helpless. It is almost impossible to deceive them and their cunning is remarkable. They see all manner of animals and things with a vividness unsurpassed.

Two patients were admitted to the hospital whose removal would not have been made had any objection been offered. One was a case of heart disease whose debility was extreme. The other one, a case in which a laparotomy had been done a few hours before the report of smallpox was made. Recovery from the smallpox resulted in each case.

The period of incubation, that is to say, that period which elapses between the time of the exposure to a case of smallpox or the infection of smallpox and the appearance of the first symptoms of the disease, has been stated as anywhere from five to thirty days, with an average of from twelve to fourteen days. These averages have usually been accepted by health officers for their guidance in the management of their quarantines; in the District of Columbia the period is sixteen days. I do not feel safe in stating an entire freedom from an attack of the disease in an unvaccinated subject until twenty-one days have passed since the last known exposure, in spite of any teachings or the experience of any one, for in this infection the exception will prove the rule.

Some of the vaccinations I have seen were almost criminal in their appearance, and the results were such as to aid the antivaccinationist in his fight against such a protection; nor have these operations always been done by the uninitiated, but in many instances by men who should have known better; but vaccination as vaccination never has resulted fatally; such fatalities as have occurred during or soon after the process have been from causes due to infection with extraneous matters, or from a previously-existing disease.

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Second attacks of smallpox sometimes occur. I have seen four instances of such second attack—two were undoubtable, one was my own case. Dumesniel, of St. Louis, mentions a case as having had seven attacks.

My youngest patient, in this city, was four weeks old, my oldest was eighty-two years of age; both recovered.

Tuberculosis frequently develops in those predisposed, but usually constitutional diseases are held in check during an attack of smallpox; smallpox is a clearing house for disease.*

Dr. W. C. Woodward said that the paper portrayed very graphically the many troubles and annoyances that attend the administration of the smallpox service, but he was glad to note that there were some bright spots deserving of mention. In view of the many cases of smallpox that are unrecognized by the general practitioner often for a number of days, as so frequently noted among those reported by Dr. Eliot, he threw out the suggestion that it would be advisable to bear in mind in every case in which an intercurrent eruption appears in the course of a supposedly different disease, the possibility of smallpox. He mentioned a case in which one after another of a family became ill with what was called by the physician in attendance typhoid fever, but curiously all the patients began to develop an eruption; so fixed in the physician's mind was the diagnosis of typhoid fever, however, that he thought all his patients were suffering from intercurrent pemphigus. It was later recognized that all of them actually had smallpox.

Further discussion was postponed, and has not yet taken place.

HIGHER EDUCATIONAL STANDARDS.—We cannot rid ourselves of dogmas and "pathys" until we can secure a universal primary law as to the minimum amount of knowledge on fundamental branches. To accomplish this the American Medical Association must coöperate with and encourage medical colleges to do better work. The profession owes it to itself to investigate in some manner what the schools are actually doing and to make it known whether or not they fulfill their obligations to the student. No well-conducted college could object to such reasonable supervision.—President MAYO, Boston A. M. A. Meeting.

*This paper was illustrated with sixty-four lantern slides, but I have not been able to make suitable arrangements for their reproduction; they are therefore omitted.—I. E.

EXOPHORIA, ITS SYMPTOMS, SIGNIFICANCE AND TREATMENT.*

By OSCAR WILKINSON, A. M., M. D.,

Washington, D. C.

An apology might be demanded for offering a paper on such a threadbare subject were it not for the fact that some of the symptoms and their significance are entirely overlooked by many of our best men.

Exophoria consists in a tendency to a deviation outwards of one eye. Where there is an entire deviation the condition is known as exotropia. The condition was first scientifically described by Stevens, of New York.

Symptoms.—The symptoms of exophoria may be those of simple eye strain which may be manifested by pain in the eyeball and burning or itching of the eyelids, and pain in the temples; but one of the most constant and most severe symptoms, and the one most frequently overlooked, is a *basilar* headache. This symptom is so constant in this condition that for years I have been in the habit of making a note, marking "exophoria" in taking the history of those patients who complain especially of eye pain associated with a more or less constant headache at the base of the brain. That strain upon the intrinsic and extrinsic ocular muscles is one of the most frequent causes of headache has for a long time been known and accepted by the profession; but I have not been able to note that others have observed that exophoria acts as a causal factor in producing headaches at the base of the brain. I believe that, outside of syphilis, exophoria associated with refractive errors causes more of that character of chronic headache than all the other conditions combined. This I do not believe is generally known or appreciated.

Exophoria is usually associated with refractive errors, which should be accurately corrected. Many of the symptoms disappear after this is done. Some claim that heterophorias are relieved after a careful correction of the refractive error, but I have seen exceedingly few cases of exophoria decrease, even after the use of correcting lenses for a long time; in fact, I have yet to

* Read before the Medical Society, March 17, 1909.

see my first case of exophoria materially decrease after the use of correcting lenses alone.

In those cases in which some authors claim to have obtained such results I am constrained to believe that they failed to make their first examination with sufficient care or under varying circumstances, *i. e.*, when the eyes were tired, and again after a night's rest. I invariably examine my patients both before and after a day's work.

Its significance.—Exophoria, in my opinion, causes more nervous breakdowns than any other single lesion of the eye. I would like to be clearly understood on this point. I do not mean to say that exophoria causes more symptoms of eye strain than astigmatism or hypermetropia, as it is not nearly so common; what I do mean to say is, that we see more cases of loss of nerve power and nerve force from exophoria than from other eye conditions. In hypermetropia and astigmatism we have eye strain, and often so severe as to cause disability and render the patient temporarily, and at times more or less permanently, unable to do his work; but I have failed to see so many cases of severe neurasthenia in which I could attribute the condition directly or solely to astigmatism or hypermetropia.

I have had a number of patients suffering with exophoria who had been disabled for months and even for years, and had been treated by several nerve specialists for neurasthenic conditions, who were invariably relieved by remedying their exophoria.

The extent of these nervous symptoms has in some cases been so severe as to border on insanity. A few years ago I reported some of these cases in the *Virginia Medical Semi-Monthly*; and since then I have had several of the same type, of which the following case is an illustration:

Mr. B., medical student, was endeavoring to take a medical course in the George Washington University; at the same time he was working seven or eight hours a day in the Government service. He developed neurasthenic symptoms and his condition became so serious that it appeared he was about to lose his mind. He was obliged to abandon both work and study for a month or six weeks, and go to the country. On returning to the city he endeavored to take up his work, but his old symptoms returned. One of my friends sent him to me on account of basilar headaches. I found him suffering with a compound astigmatism as-

sociated with five degrees of exophoria. He was wearing lenses which corrected his astigmatism and hypermetropia, but these did not relieve his headaches nor did they enable him to do his work. I corrected his exophoria, at the same time correcting his refractive error, and gave him exercises to strengthen his internal muscle. He was very anxious about his condition, and I told him that by not overworking himself at the start he would be able gradually to do the full amount of work. He returned to his work and to school and passed his examinations; afterwards he went to another school, graduated with honors and is now practicing medicine. He has had no recurrence of his nervous trouble. I could report a number of such cases, but I consider one sufficient to illustrate the character of cases which are not usually recognized as suffering from this condition.

Treatment.—The treatment of exophoria may be divided into three classes :

First. Correction or partial correction of the exophoria by means of decentering lenses or prisms.

Second. The exercise of the internal rectus muscle.

Third. Operative treatment.

In prescribing lenses I have failed to obtain very marked benefit from decentering of lenses; and in cases of from one to eight degrees of exophoria the use of prisms, base in, is advised, correcting from one-half to two-thirds of deviation. In low degrees full correction is often best, while in the higher degrees, on account of the thickness of the prisms, not more than one-half of the deviation can be corrected. Many cases with more than eight degrees of deviation will not yield to treatment by means of prisms and exercise, and operative treatment is necessary.

Cases of from one to four degrees of deviation are those which usually have the greatest amount of headache, and are invariably relieved by prismatic correction combined with correction of any refractive defect.

The exercise of the ocular muscle is usually conducted by means of prisms held before the eyes, with their bases out, while one looks at a candle or other light twenty feet or more distant. This is placed in front of the eye, and moved several times in a minute. This process is continued for from five to ten minutes two or three times a day.

A very simple and effective exercise is to have the patient hold

a card with a small spot on it before the eyes, and while looking at the spot the card is held at arm's length from the eyes and slowly brought closer to them. As the card approaches to within one to three inches of the nose the spot on it will be seen double.

The card should then be held at arm's length and again brought close to the nose until the spot is again seen double. This should be continued for from five to ten minutes. A convenient method is to make a mark on the thumbnail and have the patient look at this instead of using a card.

Another method which I have found very convenient is the use of the Worth amblyoscope. This instrument is so well known that a description here is not necessary. I must say that I have not experienced the beneficial results from the exercise of the internal ocular muscle that others claim to have obtained, unless the patient continues the exercise for several months.

Operative treatment.—The operative phase of the treatment of exophoria is still a disputed question. Some never operate in these cases, while others do so on a large percentage of those patients with an excess of six degrees. I first correct the error of refraction, and if I need more relief I then use prismatic lenses and exercises. If the deviation is above five degrees and is increased by the use of prisms, and the patient is not relieved, I advise operative treatment.

There are but two operations to be considered: one an advancement of the weaker muscle, the other a tenotomy or partial tenotomy of the external rectus of one eye or a tenotomy of the external with advancement of the internal. In low degrees of deviation I invariably advise the advancement operation, which is the only one to be considered in a deviation of less than six degrees.

The objections to the advancement operation are that it is more tedious and takes a longer time than the tenotomy or partial tenotomy, and the site of the operation is sometimes red for months. Partial tenotomy is rather a questionable procedure, as no one can tell what the ultimate results will be. It has been rather a disappointment in my hands.

When the deviation is above eight degrees, and relief is not obtained by other and simpler means, a tenotomy of one external rectus is advisable. Some operators seem to have a horror of a tenotomy of any ocular muscle; but I have never had an occasion

to regret doing a tenotomy of an external rectus in a patient of eight degrees or more of external deviation.

In patients above thirty years old I have always found this method of correction of eight to ten degrees satisfactory. I would certainly hesitate to do a tenotomy on a young person unless the deviation was more than ten degrees. When the tenotomy is done close to the eyeball, and where little of Tenon's capsule is cut, we usually get a correction of from five to ten degrees. In younger subjects, as a rule, we get more immediate results, however; as the muscle re-attaches, this amount is reduced. Fortunately, the severer symptoms of exophoria are seldom seen in children, hence operative procedure in the young is the exception. In patients with from twelve to twenty degrees of exophoria associated at times with diplopia, it is often necessary to tenotomize one muscle and advance the opposite internus, especially if the patient is above thirty. The one disadvantage in such apparently radical procedure is that for a time the patient is liable to have diplopia in the extreme right and left fields. This, however, is usually overcome within a few months.

Dr. Griffith agreed in the main with what Dr. Wilkinson had said; not, however, with the statement that exophoria is generally overlooked by oculists. Dr. Griffith did not approve of partial tenotomy; given an internal squint treated by partial tenotomy, if one fiber of the muscle be left the squint also remains. Partial tenotomy may at times have some psychic value. If the trouble can be corrected by lenses, tenotomy should never be done; but this operation is the only resource left if glasses do not correct the defect.

Dr. S. B. Muncaster had heard this question discussed in Chicago by some of the ablest men in the country, and the general opinion was that tenotomy should not be done. The favorite procedure was the division of some of the fibers of the muscle on both sides of the muscle bundle, so as to allow the whole structure to stretch—Todd's method.

Dr. Henning hardly thought that Dr. Wilkinson meant to imply that exophoria was overlooked by oculists, the examination for this condition being part of the routine examination by every careful oculist. In discussing the methods of treatment it is necessary to remember that there are two varieties of exophoria, which demand radically different procedures. If the exophoria be due to an external rectus stronger than normal, then the only salvation lies in weakening the muscle by cutting it; if the deviation be due to an under strong internal rectus (the external

rectus being normal) the proper procedure is to strengthen the internal muscle by exercise, and this can be done.

Dr. Wilkinson did not wish to bring the indictment of failure to recognize exophoria against oculists; the neglected cases come from the general practitioners. He was not in favor of partial tenotomy to correct the condition, although that method is used by many eminent men; perfect results achieved at the time of operation may be far from perfect after healing and scar formation have taken place. Complete tenotomy can do little or no harm in any event.

REVIEW OF OBSTETRICS.*

By A. F. A. KING, A. M., M. D., LL. D.,

Washington, D. C.

It is in obedience to the request of the retiring President of the Society, Dr. H. D. Fry, that I beg to present the following review of obstetrics for the year 1908.

While the domain of obstetrics is a limited one when compared with the wider fields of medical practice and of surgery, the work of the past year nevertheless presents a wealth of material on important subjects far too numerous to be embodied in a brief report, and of which, therefore, I have tried to select a few that may be considered of particular interest.

The main purposes of the science and art of obstetrics are to protect mother and child from suffering, from disease and from death during pregnancy, parturition and the puerperal period. Looking back over the past year a reviewer should, I think, endeavor to show what efforts and what progress have been made along these lines; but it will be impossible to separate entirely the work of 1908 from that of the immediately preceding years. Perhaps the better plan will be to ask ourselves how we stand at the present date with regard to the more important problems awaiting solution in the field of midwifery?

First, with regard to analgesic remedies. To mitigate the suffering of parturient women without prejudice to the labor or injury to the patient, has long been the devout wish of every humane obstetrician.

* Read before the Medical Society, February 24, 1909.

The latest effort in this direction has been by spinal analgesia, with scopolamine, morphia and other drugs, in place of general anesthesia by ether and chloroform, as of old. The method has been used less frequently in obstetrics than in surgery. A recent review in the London *Lancet* (December 26, 1908) comprises a record of 3,391 *surgical* cases, by fourteen different operators—the results being certainly questionable.

The most extensive record of obstetric cases that I have found is that of Prof. Krönig, of Freiburg, who reports 1,700 labors in which spinal anesthesia was used. In the whole number there were only two deaths (certainly a most remarkably favorable result), and these two were in no way attributable to the drugs, for one died from hemorrhage due to placenta previa, and the other from uterine rupture the result of deformed pelvis.

Yet, notwithstanding these good results, Krönig himself remarks: "Although a strong advocate of spinal anesthesia, I cannot recommend it for confinements, for it paralyzes the muscular action of the abdominal walls—a factor of paramount importance in normal labor." He also observed that the patient must be kept under *skilled* and *continued* observation, which had not always been borne in mind by those in whose hands the method had proved unsatisfactory.

If these restrictions are acknowledged by Krönig, who appears to be the champion advocate of the method, what shall we say of others whose results have been far less satisfactory? A. Bertins (*Jour. A. M. A.*, Jan. 11, 1908), who had an experience of 400 labor cases under the scopolamine-morphine method, reports that in 36 per cent. of the cases no analgesia was produced; in 38 cases the uterine "pains" were lessened, causing death of the fetus from prolonged labor and weakening of the muscular power. Other observers have reached the same conclusion, viz: labor is delayed and the child sometimes asphyxiated. Gminder, after an experience of 100 cases, concludes that this method of producing anesthesia is dangerous both for mother and child (*Brit. Med. Jour.*, Part 1, Vol. I, 1908, p. 483).

On the whole, I think we may conclude, with Krönig, that the method cannot at present be recommended for confinement cases. An easier and more promising means of relieving the woman's suffering during labor is by the hypodermic injection of morphia (gr. $\frac{1}{16}$ th) with hyoscine (gr. 1-100th) every three or four hours, as

may be necessary, stress being laid on the morphine if the pains are strong and violent, while the hyoscine is accentuated in case the woman seems to suffer inordinately from what pains she has. Buist, of Edinburgh, reports 65 cases, and 30 others treated by his assistants, 95 in all, from which he concludes: "It is difficult to describe the attractions in private practice of a method which relieves the patient's sufferings, while it allows labor to progress regularly, and which does not require the constant personal presence of the medical practitioner, as the obstetric anesthesia with chloroform does." (*Brit. Med. Jour.*, September 19, 1908, pp. 808, 809.)

Oscar Polano (*Münch. Med. Woch.*, June 2, 1908) reports three cases of Cæsarean section (for rachitic pelvis), under lumbar anesthesia, in which the mothers and children all did well without any disagreeable symptom.

Pubiotomy.—The operation of dividing the pubic bone on the side of the symphysis pubis instead of cutting through the symphysis itself, in cases of narrow pelvis, has been growing in favor during the last few years; more in Germany, however, than in this country.

In May last, Williams, of Baltimore, stated (*Amer. Jour. Obst.*, August, p. 215) that at the German Gynecological Congress (meeting of 1907) Döderlein presented an analysis of 170 pubiotomies, by 35 writers, with a maternal mortality of 4.1 per cent.

Nineteen other speakers gave an experience of 319 cases with six deaths, mortality 1.88 per cent. Gigli stated that he had collected reports from nearly 300 operations, with a mortality between 1 and 2 per cent.

Bumm has reported fifty-two operations performed in his clinic, with only one death, which was due to embolic pneumonia.

Dr. Zinke, of Cincinnati (*Amer. Jour. Obst.*, November, 1908, p. 740), states that the division of the bony ring of the pelvis, whether done through the symphysis or on one side of it, has given remarkable results in the hands of Pinard, Zweifel, Kroegnig, Bumm and Döderlein, who collectively record more than two thousand cases of narrow pelvis with a maternal mortality of 0.1 per cent., and a fetal mortality of only 6 per cent.

In the United States the operation has not been done so frequently. In May, 1906, Dr. H. D. Fry, in his paper on "Pubiotomy in America" (*Trans. Amer. Gyneco. Soc.*, 1906, p. 65,

etc.), could only find twenty cases, two of which were done by himself and seven by Dr. Williams, of Baltimore. Since then Williams has reported thirteen more pubiotomies (nine operations by himself and four by his assistants) in which there was no maternal death and three fetal deaths—only one of these last being attributable to the operation. (*Trans. Amer. Gynec. Soc.*, May, 1908.) Under date of January 14th, Dr. Williams writes me that he has since had three more cases, all of which were successful for both mother and child, and expresses the opinion that pubiotomy fills a useful place in moderate degrees of contracted pelvis in which the patient has been subjected to the test of labor; but that when the pelvis measures 7 cm. ($2\frac{3}{4}$ inches) or less, with a history of previous difficult labors, an *early* Cæsarean section would be the better operation.

I suppose that there are many other recent operators with whose work I am not familiar, but enough has been said to show that pubiotomy is growing in favor with obstetric surgeons. Yet, while highly approved by some, it is condemned by others who predict that little will be heard of it in the future (Hirst, in *Amer. Jour. Obst.*, July, 1908, p. 129).

Of course a great deal depends on the skill of the operator and on the methods of operating, of which last there are at least three, viz: 1st, the open pubiotomy of Gigli; 2d, the *partial* subcutaneous operation of Döderlein, and, 3d, the *strictly* subcutaneous one of Bumm. The partial subcutaneous hebosteotomy of Döderlein seems at present to be most in favor.

Cæsarean section.—The work of the past year in the Cæsarean operation has served to confirm and establish the fact that if the operation be done at the proper time, by a skilled operator, with suitable assistants, a rigid aseptic technique, in a suitable place with suitable surroundings, and on uninfected women in whom there shall be no complicating abnormality other than a narrow pelvis,—under these circumstances experience demonstrates that the Cæsarean section can be done (barring accidents) without any mortality to either mother or child.

Even under less favorable circumstances several operators have been able to report several series of cases in which the maternal mortality was only 2 per cent. or thereabout. I need not quote the actual figures, which are perhaps familiar to most of us.

But growing out of this diminutive mortality attending the

Cæsarean section has arisen the practice of doing the operation in other cases than those of pelvic abnormalities; and, further, a most notable change of opinion has been gradually developing as to the degrees of pelvic contraction, especially in the antero-posterior direction, which would justify the performance of the operation.

It is not so very long ago—one or two decades, perhaps—since there was a general agreement as to a measurement of $1\frac{3}{4}$ inches in the *conjugata vera* constituting the absolute indication for Cæsarean section whether the child were dead or alive.

But later on a conjugate of two inches was considered an absolute indication for the operation; and still later some obstetricians of note have been disposed to extend this measurement to two and a half or even three inches, especially in cases where, besides antero-posterior flattening of the pelvis, there was also “*general contraction*.” And quite recently one obstetric writer and operator (Newell, in *Am. Jour. Med. Sci.*, Oct., 1908, p. 540) has seriously considered the justifiability of doing the operation where the pelvic diameters were actually of normal length. I mean cases, not in which there was any serious complication, such as eclampsia, placenta previa, uterine rupture or tumors, but in which the woman had previously borne children with large heads, or from some other causes had had extremely long and difficult labors necessitating, perhaps, long and difficult high forceps operations, with all the dangers and subsequent morbidities that such cases frequently imply.

And surely there is nothing very unreasonable in this proposition. If we could know positively beforehand in any given case that such a painful, prolonged and serious delivery by the high forceps operation, with all its risks to mother and child, were sure to occur, we might well ask ourselves the question whether a clean-cut, skillful, aseptic and “elective” *primary* Cæsarean section might not be the better plan for all concerned in such difficult, painful and exhausting labors.

Of course, the old and ever recurring question—so difficult to decide—would again present itself, viz: as to whether a Cæsarean section, symphysiotomy or pubiotomy would be preferable in such cases. To discuss this boundless question would carry me too far afield.

I have said what I have to indicate the trend of modern ob-

stetrics; it is emphatically in the direction of operating by one or other of the cutting operations, rather than subject the woman to the agonies and dangers of a tedious labor.

Has modern woman really deteriorated with regard to her capacity for childbirth? Armed with anesthesia and surgical skill, is the time *really* coming when the "fears and sorrows of women in travail" will be assuaged by the consoling edict, displayed, perhaps, in the portals of our maternity hospitals: Children extracted without pain while you wait? Such a consummation is not, perhaps, entirely beyond the range of possibility, at least among certain favored communities.

Observe that it is not in any spirit of irony or ridicule that I thus speak. I fully appreciate the magnificent and humane work of obstetric surgeons in their recent operative management of difficult labors; but we cannot help remarking that these superior advantages can be enjoyed only by the "favored few," who can avail themselves of surgical treatment in well-appointed hospitals. Outside of our large cities, miles away from maternity institutions, scattered broadcast over the country, are many thousands of parturient women who will be outside the pale of these superior surgical advantages. In asking what shall be done for *them*, in cases of dystocia, it is evident that the practice of obstetrics divides itself into two very distinct parts, viz: 1. Hospital practice with surgical skill; 2. Private practice without surgical skill. This is the difficult problem of obstetrics with which teachers and textbooks are compelled to grapple. It is said that every difficult and complicated case should at once be sent to a hospital. In rural districts this is often impracticable. Again, every obstetrician should be a capable surgeon. This is impossible; the world does not provide a sufficient number of surgical cases to give to many of us the experience necessary to produce a capable and skillful operator.

During the last census year (1900) there were in the United States 2,049,132 births. Suppose we call the odd 49,132 fifty thousand; or, to be still more liberal, let us double the number and call it one hundred thousand. Now, is it probable that this number—one hundred thousand—were delivered in hospitals? Are there in the United States a hundred hospitals whose maternity cases reach one thousand per year? Or did all the hospitals conjointly take care of one hundred thousand labor cases in a

single year? I think this is questionable. But if it were true, and even if we again doubled this number, and said that 200,000 cases were delivered in hospitals, it would still leave something between nine and ten times that number, viz: 1,849,132, to be delivered in their homes. Considering the "greatest good to the greatest number," the real problem of modern obstetrics is the proper management of dystocia in the homes of the patients by the general practitioner.

But this is a problem for discussion. I must return to continue my review.

Extra peritoneal abdominal hysterotomy.—Zweifel, of Leipzig, has reported four successful cases of abdominal Cæsarean section, done without opening the peritoneum. The operation consisted in detaching the peritoneum from the bladder and from the uterus as far up as was necessary to allow of a uterine incision through which the child could be extracted. He says that the delivery was not possible by hand but required forceps, which, however, he considers an insignificant complication, probably due to the Trendelenburg posture.

Vaginal Cæsarean section.—This method of delivery has proved useful in the rapid emptying of the uterus, especially in cases of eclampsia. Dr. H. D. Fry, our last President, has recently (*Jour. A. M. A.*, December 12, 1908, p. 2043) reported twelve cases, six of his own, and six others by Drs. Sprigg, Moran and Kelly, of this city, in which all the mothers recovered except one. Unfortunately, we are again compelled to note that this operation should only be done by those having surgical skill, as was prudently insisted upon by Dr. Fry in the discussion of his paper.

Antenatal craniometry.—No distinct progress has been made in the methods, instrumental or otherwise, of measuring the fetal head before birth. The proceeding of Muller still remains the most useful for this purpose so far as I know. To ascertain the dimensions of the fetal skull before birth is perhaps the most pressing want of scientific obstetrics. How illogical seem to be our straining efforts to measure with exactness the pelvic passage, while we remain ignorant of the size of the passenger! It is like examining a nut without knowing the size of the screw, or measuring a keyhole without measuring the key to go in it.

Aseptic and antiseptic obstetrics.—One may well ask, What can

remain to be said on these familiar topics in this enlightened age? Just this. Thousands of women are still dying every year, all over the world, from puerperal infection. About a year ago (Dec., 1907) Leopold in a lecture stated that from 300 to 400 women die annually, during confinement, in Saxony; in Prussia 4,339; and 6,000 deaths occurred in the German Empire in the past year. Zinke affirms (*Amer. Jour. Obstet.*, Nov., 1908, p. 735) that, except in hospital clinics and in maternities, there has been *no improvement* in the maternal and fetal mortality and morbidity of midwifery for the last twenty years.

The chief factor in the production of these septic cases appears to be the vaginal examinations. In outdoor maternity services, where women are delivered in hovels and homes that are anything but aseptically clean, puerperal infection will hardly ever occur if no vaginal examinations are made. With acquired skill in abdominal palpation the goal of modern obstetrics, with a view to prevent infection, is the conduct of labor without invading the vagina with the fingers. And that this can be done has been amply demonstrated. Among others who have adopted this régime may be mentioned Leopold, who has reported 919 cases of obstetrics, some of them abortions, in which no vaginal examination whatever was made. Even though a few of the abortion cases bled a good deal, he still desisted from the tampon or any other vaginal application. They all recovered. There were only two cases of septic infection in the whole 919, and these were possibly due to auto-infection (*Amer. Jour. Obstet.*, Feb., 1908, p. 235). Some of the abortion cases even had fever and a putrescent discharge from retained products of conception; but these also were left to themselves, without vaginal interference, and they recovered. In these last cases we may say the principle of non-intervention was carried a little too far, but the experiment was an interesting demonstration. We need not imitate it, but surely many of us need reform from the still prevalent practice of repeating this dangerous vaginal examination for no other purpose, very often, than to satisfy our impatience or curiosity as to the progress of the labor, how long we may be detained, &c.

A good many worthy obstetricians who have, perhaps, not kept up with modern bacteriology, have never fully appreciated the minuteness of the microbe and its astounding powers of multiplication. Some of us possibly do not realize that the little

dark space under a finger nail is sufficiently capacious to contain several hundred millions of microbes. And some of us will perhaps smile with derision, or at least incredulity, when told that a single bacterium, one micron in length, dividing and subdividing once every sixteen minutes (as some of them do) would, in twenty-four hours, produce so many that, if they were placed end to end in a line they would make a line so long that light, traveling 186,000 miles in a second, would require more than a hundred thousand years to flash from one end of that line to the other. This statement is quoted from Cohn (*Die Pflanze*, Breslau, 1882, p. 438) and was recently repeated in a lecture by Prof. F. F. Blackman (*Science*, November 6, 1908, p. 631) before the British Association in Dublin. At first I could not believe it, but after making the calculation, I find it absolutely correct. In fact, the journey of light in a hundred thousand years would still be 199,566,639,713,826,169 miles from the end of the line of microbes. Since this is the product of a single bacterium, what can we expect from the millions contained under an unclean finger nail! True, the human body contains millions of leucocytes to battle with them, and while, as Sydney Smith ironically remarked: "There is nothing so uncertain as figures except facts," there still remains the dismal record of deaths from septic infection during childbirth which can scarcely be abolished until there prevail a more general recognition of the astounding potentialities of microbes, and a more general adoption of a strictly aseptic technique in the practice of obstetrics throughout the world.

Uterine endoscopy.—Some years ago at a meeting of the Washington Obstetrical and Gynecological Society, I suggested the use and construction of a uterine speculum provided with electric illumination, for the examination of the cavity of the puerperal uterus by inspection. It is with some gratification I note that this has recently been accomplished by Dr. C. N. David, who describes his instrument for the examination of the puerperal endometrium (*Bull. de la Soc. d'Obstet. de Paris*, December 19, 1907, and *Amer. Jour. Obstet.*, March, 1908, p. 448), and states that he can see all lesions of the mucous membrane, the placental site, can discover and remove retained fragments and note the difference between the rose color of a normal mucosa and the peculiar gray of septic infection. In one instance he discovered

the perforation made by an instrument in producing abortion. He adds that the examination is easy and painless and has no inconveniences or dangers.

Dr. H. D. Fry said that it was difficult to criticise the paper, as it had dealt with so many subjects and had so completely fulfilled its object of reviewing the field of obstetrics.

The use of scopolamin-morphin anesthesia had been abandoned at Columbia Hospital, after thorough trial, because of the danger of asphyxiation of the infant. The figures of Krönig given by Dr. King had dealt only with the maternal mortality.

In pubiotomy the difficulty is not the mortality of the operation but the morbidity. The convalescence is always tedious, and usually painful and attended with annoying complications; phlebitis occurs in 25 per cent. of the cases, and lacerations of the urethra and bladder are common. He had given up the operation for symphysiotomy. Williams' (of Johns Hopkins) results have not been satisfactory. Dr. Fry himself would no longer perform pubiotomy as a primary operation. He would prefer Cæsarean section, but would prefer pubiotomy to craniotomy. As the operation of Cæsarean section becomes more common the degree of pelvic contraction, regarded as an absolute indication for the section, has become more and more liberal. This is an advance in the right direction, but the operation has undoubtedly been carried too far; as, for instance, when one writer advocates its performance in neurasthenic women, on the ground that the convalescence is so much quicker after operation than after labor by the natural forces and ways.

Dr. Fry did not believe that there must of necessity be a difference in the skill of the obstetrician working in the home and that of the hospital attendant; some men carry their surgical skill into private houses and attain the same results as in the hospitals.

In one particular Dr. King did not appear as a progressive obstetrician—that was his advocacy of the avoidance of vaginal examinations. By refusing to avail himself of the knowledge gained by a skillful vaginal examination the obstetrician reduces himself to the level of the midwife. The danger comes not so much from the examination as from the man who makes it. How otherwise may we obtain the information as to degrees of flexion, as to face presentations, prolapsed cord and the like, the recognition and treatment of which constitute good obstetrics? By avoiding vaginal examinations many opportunities of affording valuable and timely help to the parturient woman may be lost. The promiscuous use of forceps has done much to cause the art of obstetrics to degenerate; the avoidance of vaginal examinations will add to the degeneracy.

Dr. King in closing said that Dr. Fry's criticisms had been

well stated and were founded upon good judgment. When Dr. King had read and quoted Leopold's figures he had wondered if the 919 cases of the latter had been consecutive or selected.

CASE OF LUMBRICOID WORM IN OVARIAN ABSCESS.*

BY H. D. FRY, M. D.,

Washington, D. C.

The patient was a colored woman, 24 years old; admitted to Garfield Hospital, with a diagnosis of double salpingitis. She was so septic and had such a high fever, the uterus being fixed and all the pelvic structures very tender, that it was deemed inexpedient to operate at once. Dr. Fry accordingly waited for the subsidence of fever, and finally operated February 9th. During her stay in the hospital before operation she vomited a lumbricoid worm, and ova were found in her feces. When the operation was done it was found that the left tube contained no pus, but the ovary was enlarged to the size of a may apple and was evidently the site of an abscess. In attempting to enucleate the ovary the abscess broke, and pus and a lumbricoid worm were evacuated. The worm was about 6 cm. in length. It must have wandered up the vagina, through the uterine cavity and the tube, and finally penetrated the ovary by way of a ruptured Graafian follicle; for the abscess was entirely within the parenchyma of the ovary and the infecting organism was the colon bacillus. The infection was probably conveyed by the worm. The case was unique so far as he was informed, but he had not had the opportunity to examine the literature with care.

Dr. S. S. Adams said that it was not at all unusual for lumbricoids and oxyures to wander into the vagina of children and there set up troublesome irritation; vaginitis, urethritis and even cystitis may be so provoked. It seemed to him a most singular migration for a lumbricoid to traverse so long a route and finally find a ruptured Graafian follicle in which to bury itself; certainly the worm must have been very young when the journey

* Reported to the Medical Society, February 24, 1909.

was made. He did not think it possible for an ovum to be transported so far and then hatch out in the ovary.

Dr. Atkinson had had in his practice a young child with a severe and intractable vaginitis. In bathing the parts with an antiseptic wash one day, the mother found a lumbricoid worm in the vagina and removed it. Complete recovery quickly followed. He reported this case because it demonstrated that in this instance the lumbricoid had made the vagina its home for three weeks.

Dr. I. S. Stone took it for granted that it had been demonstrated that the worm in question was actually a lumbricoid. The case was so unusual there should be no room left for doubt as to the identity of the parasite. There were two ways by which the worm could reach the ovary: either by the way suggested by Dr. Fry, which was most singular, or by way of a perforation of the bowel communicating with the ovary through adhesions. He inquired if there were any adhesions binding the ovary to the bowel.

Dr. G. Brown Miller said that the history had not suggested that the infection of the pelvic structures had followed the puerperium; he asked if the woman had recently borne a child? It was known that puerperal sepsis has been occasioned by the migration of worms into the parturient canal, and, with the dilated condition of the tube at that time, it might be possible for a worm to pass to the ovary.

Dr. Fry did not wish to add to his report of the case, except to reply to Dr. Stone that there was no doubt as to the nature of the worm in this case, and that adhesions between the ovary and bowel had been excluded as a possible route of migration of the lumbricoid.

CASE OF ACUTE YELLOW ATROPHY OF LIVER.*

By D. PERCY HICKLING, M. D.,

Washington, D. C.

E. D., white woman, age 22, married; occupation, domestic; born in Virginia; lived in the District of Columbia six years. Admitted into the Washington Asylum Hospital, Dec. 29, 1908, from U. S. Jail. She was jaundiced, and vomited whenever any article of food was taken, the character of the vomiting depending upon the article swallowed; this seemed to occur only when food was taken. She seemed hungry, complained of no pain ex-

* Reported, with specimen, to the Medical Society, February 24, 1909.

cept a headache, had no cough and no drug habit; had used alcohol moderately, and was in a fair mental condition; her reflexes were normal. The conjunctiva was yellow, and the pupil reacted to light and accommodation. She said that she had been sick about five days and that her bowels had not moved for the last two days. Her pulse was 80, temperature 99.6, respiration 20, tongue coated, heart apparently normal, spleen normal. Liver dulness markedly decreased; in fact there was no dulness except over the seventh intercostal space, all below being tympanitic, while above, the percussion sound seemed to be the normal resonance of the lung. At one time she complained of a diffused pain over the region of the liver, which seemed to increase on pressure.

She was well nourished, of medium height; skin dry and of deep yellow color; her elbows and portions of posterior part of chest showed slight subcutaneous hemorrhages; mucous membrane of mouth a deep red color; no tenderness over gallbladder; uterus and appendages in good condition. She had no convulsions previous to admission. She said she had had a laparotomy in Columbia Hospital in 1905. She died Jan. 2, 1909, at 7.30 A. M.

The history of her last illness was as follows: Had been in her usual good health until about Dec. 25th, when she began to feel badly, thought that she had indigestion, and complained of some pain in the region of the stomach; bowels constipated and appetite poor. Two days later she became jaundiced, the yellow color coming on very gradually and becoming deeper and deeper; she had not noticed any change in the appearance of her stools. She vomited once; until admitted to hospital her vomiting was as before noted; vomiting became, however, more severe, until she vomited almost constantly even when no food was taken. The day after admission she was drowsy; bowels still constipated, but a good movement of light brown color occurred after enema. On the 31st her mental condition became worse; she was in a profound stupor; slight bleeding from her mouth, apparently from the mucous membrane, which appeared congested; a slight convulsion occurred, clonic in character, the muscles of the back and limbs being affected; these increased until at times all the voluntary muscles became convulsed. Three of these convulsive spells were noticed on the 31st, and during the intervals she was

very restless although unconscious. She continued to have slight hemorrhages from the mouth. January 1st, her condition was about the same, although there was a slight rising temperature at 8 P. M., the thermometer registering 103.6; pulse rapid and weak, having risen from 80 to 148. She continued to grow worse and vomited at intervals, until on the morning of the 2d her temperature rose to 105 degrees and she died.

The cardinal symptoms of acute yellow atrophy of the liver were all well marked in this case, namely: jaundice, diminished size of liver, delirium, and leucin and tyrosin both present in the urine.

The differential diagnosis in these cases is not difficult, being only confused with hypertrophic cirrhosis and phosphorous poisoning, although there is little difference in the onset between an acute yellow atrophy and a catarrhal jaundice; afterwards the graver symptoms, especially delirium, are noticed. While the clinical symptoms of a hypertrophic cirrhosis are similar, yet the enlarged liver and the absence of leucin and tyrosin render the diagnosis easy. While phosphorous poisoning has hemorrhages, jaundice and a small liver, yet the gastric symptoms are more marked and leucin and tyrosin are absent. An interesting point in this case to me is the condition of the urine; the first examination, made on December 30th, showed an amber color, neutral reaction, specific gravity 10.15, albumen and sugar negative; while the examination made on the 31st showed a cloudy urine, alkaline reaction, albumen and sugar negative, hyaline, granular and epithelial casts, calcium oxalate crystals and bile; and that made January 1st showed a dark amber color, with considerable sediment, specific gravity 10.52, albumen and sugar negative, bile, granular casts, epithelial cells and a large number of bacteria, and the presence of leucin and tyrosin.

The autopsy by Dr. Blackistone showed, in addition to the external features noted in the physical examination, the following:

Heart very small and flabby, of light brown color, vessels prominent, arteries somewhat sclerotic, weight 9 ounces including the pericardium; pericardium apparently normal, pericardial fluid normal and valves normal. Lungs normal; left lung weighed 12½ ounces. Stomach normal in size, mucous membrane hyperemic and covered with dark brown mucus. Kidneys increased in size, large, lobulated and anemic looking, capsules not

adherent; weight, left 7 ounces, right $7\frac{1}{2}$ ounces. Spleen apparently normal, weight 5 ounces. Pancreas apparently decreased in size and lobulation increased, weight not taken. Liver very small and of mottled appearance, dark red over greater part of surface, light pink over irregular limited areas, consistency less firm than normal, weight 27 ounces. Uterus and appendages normal. The intestines appeared normal.

Microscopic examination by Dr. J. S. Neate, of the Path. Laboratory, U. S. A., showed the liver bile stained and mottled with yellowish areas; exhibited histologically the characteristics of acute yellow atrophy; the cells of the parenchyma in general had undergone extreme fatty degeneration; areas of cell-necrosis with fragmentation nuclei common; interstitial hemorrhages had occurred and the tissue was mottled with collections of crystals, probably tyrosin. So widespread was this condition of degeneration and necrosis, accompanied by efforts of repair as shown by aggregations of round cells and proliferating endothelium, that the usual zonal delimitation was not possible. In the portal tracts there was increase of connective tissue. The capsule, thicker than normal, presented variations in thickness and a very uneven edge due to shrinkage.

The pancreas showed connective tissue increase, and the lobules as well as the fibrous framework everywhere studded with microscopic cysts; some cysts had well defined fibrous walls, and were assumed to be dilatations of the ducts from obstruction; some of them contained fine brownish needle-like crystals, others a colloidal material. The secretory cells of the organ were in general cloudy and their nuclei absent or indistinct.

The kidney exhibited an acute toxic nephritis. It was congested in areas and the epithelium of the tubules had undergone extreme fatty degeneration. These cells, swollen with large fat droplets, occluded the lumina and possessed relatively few nuclei. None of the secretory cells seemed to have escaped this degeneration except the covering cells of the glomeruli, which had proliferated and stood out prominently. There was relatively little or no connective-tissue increase and the fatty degeneration extended even to the epithelium of the collecting tubules.

Diagnosis.—Liver, acute yellow atrophy; interstitial pancreatitis, with cystic degeneration, and acute toxic nephritis.

Dr. Kober asked Dr. Hickling to state the nature of the patient's occupations prior to the onset of the disease. Had there been any possibility of phosphorus poisoning in the case? Or had there been symptoms of auto-intoxication? Either condition might be causative of the disease. The exact etiology of this particular case would be important and interesting.

Dr. I. S. Stone asked as to the frequency with which this disease follows operations.

Dr. Hickling said that this patient had been a domestic before she came under his care, at which time she was an inmate of the jail. Phosphorus poisoning was excluded by the finding of leucine and tyrosine in the urine. He had seen one case of acute yellow atrophy of the liver follow a slight operation under chloroform; the case occurred in the practice of a friend. It was not confirmed by autopsy. He had had no such case in his own practice. The cause of the disease is not known. While the liver is most strikingly affected other organs are also diseased, and, whatever the true condition, it is more than a hepatic disorder. The process is no doubt toxic, but what poisons are responsible it remains to be seen.

CASE OF ENDOTHELIOMA OF THE BRAIN.*

By EDWIN M. HASBROUCK, M. D.,

Washington, D. C.

The patient was a white farmer, age 55. His first symptoms appeared in the summer of 1908; they were headache of the right side, vertigo and vomiting, occurring periodically. He recently had an attack of grippe, following which his headaches increased and he became so ill that he had to take to his bed; his temperature became subnormal, there was ptosis of the right eyelid, the right pupil was dilated and fixed. He rapidly became worse, and when Dr. Hasbrouck first saw him he was in the condition noted above and had become delirious, talking incoherently. He was removed to the hospital for operation on the day following Dr. Hasbrouck's first visit, and the doctor had arranged for an examination of the eye grounds, but through a misunderstanding, morphin-hyoscin-strychnin anesthesia had begun before the ophthalmologist arrived at the hospital, and the

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ophthalmoscope could not be used with satisfaction. The skull was entered by an osteoplastic flap over the Rolandic area, because the symptoms pointed to a tumor involving this area and also pressing somewhere upon the optic tract or chiasm. On opening the dura, which was tense from the increased intracranial pressure, a considerable quantity of yellowish fluid escaped. He explored the region thoroughly with a probe, but had to give up without finding the tumor. The patient died; at the post mortem examination the specimen presented was found situated in the extreme base of the temporo-sphenoidal lobe, and pressing upon the optic chiasm. It proved to be an endothelioma.

Dr. Jack said that the condition described by Dr. Hasbrouck was not common, and he was to be congratulated on having made a presumptive diagnosis. It was a pity that no eye examination was made; such an examination would have pointed to the location of the tumor at the base of the brain. As tumors in this locality are usually inoperable the operation attempted by Dr. Hasbrouck might have been replaced by the decompressive operation—by making a permanent window in the skull, protected by the overlying temporal muscle.

Dr. Carr did not think it so difficult to reach the base of the brain as most surgeons seemed to regard the operation. While only one-half of the cases of tumor of the base are operable, still he had had no difficulty in finding tumors located about as Dr. Hasbrouck's had been. If a very large osteoplastic flap is made as low as possible, nearly the whole hemisphere can be exposed, and it is easy to see under the cerebrum, as in the Gasserian ganglion operation. The localization of the tumor in many cases after the skull is opened is most difficult and interesting; he had been able to locate the tumors successfully in three cases by palpation. He had introduced his finger well into the sulci, and even into brain tissue, without doing any harm, and had finally been able to feel the tumors. In his first case he had had no trouble locating the tumor, because it had eroded the skull and was protruding as a mass under the scalp. This was successfully removed, but a recurrence subsequently destroyed the boy. His second case had been in a man; the tumor was an endothelioma very similar to Dr. Hasbrouck's specimen. This man had been operated upon by Dr. Cushing, of Baltimore, but the operation had been abandoned on account of hemorrhage. Dr. Carr operated upon the patient at the George Washington University Hospital and removed the mass; he found the tumor by palpating with his finger.

Dr. Williams said that Dr. Hasbrouck should be congratulated upon presenting the specimen, because it was one of much interest. He was not so much to be congratulated for operating without having first localized the tumor. He had said that the evidence pointed to a tumor pressing upon the Rolandic area and also upon the optic tract or chiasm; but a tumor large enough to press upon both these regions must be so large as to be inconsistent with life. However that might be, the history as recited made no reference to any symptoms which pointed to involvement of the Rolandic area. The case illustrated most forcibly the importance of having such patients examined by an ophthalmologist before operating, or, better, by a trained neurologist.

Dr. Carr said that very often after the neurologist has made a clinical localization of a brain tumor, the surgeon has to locate it all over again at the operation. He quoted a case illustrating this fact, and said that he did not in this criticise the neurologists, but wished to show that many cases cannot be localized at all, except by exploration.

Dr. D. K. Shute understood Dr. Hasbrouck to say that the pupil was fixed and dilated, but later had made the statement that the eye grounds could not be inspected. As a matter of fact, the *fundus oculi* can be examined with the pupil contracted; and if a wider inspection is desirable, the cycloplegic effect of cocaine is always available. It seemed to Dr. Shute that in our present state of knowledge it is almost unwarranted to operate for brain tumor without a careful ophthalmoscopic examination and the determination of the presence or absence of choked disc.

Dr. Randolph said that the question of surgical approach in brain tumors brought to mind a case he had seen in Philadelphia in consultation with an oculist. The tumor was situated much as Dr. Hasbrouck's specimen had been, but it was localizable by the eye symptoms: Failing vision, contracting eye grounds, choked disc, etc. In this connection it might be said that the oculist often has the first opportunity to study these cases because the patients usually consult an oculist on account of the disordered vision. Dr. W. W. Keen had examined the patient and had expressed the opinion that the tumor could be reached by way of a frontal flap, and contemplated operating, but was deterred on account of a doubt as to the nature of the tumor; he feared that it was an aneurysm, and such it proved to be.

Dr. Hasbrouck said that he had reported the case because it was interesting, and because he had hoped to learn something from the discussion. He felt that the criticism evoked by his report was of interest and some of it was deserved. In his hasty report he had omitted to state that motion of the left arm and leg was somewhat impaired; he had reasoned that there must be some pressure upon the Rolandic area. In his opinion, the tumor as it rested in the brain was sufficiently large to affect the optic

tract, and by pressure from beneath to affect the Rolandic area also. He regretted that the eye grounds had not been examined; the omission was due to the lack of time and to a misapprehension by which anesthesia was begun before the ophthalmologist arrived at the hospital; the pupils were in such a state that a view of the fundus could not be had. Dr. Carr had remarked upon the possibility of palpating for brain tumors by passing the finger into the sulci; Dr. Hasbrouck had done just that thing and was relieved to have Dr. Carr's endorsement of the technic; he had, however, failed to find the tumor. He felt that he had learned much from the discussion of the case.

Therapeutic Society of the District of Columbia.

Meeting held April 10, 1909; Dr. Noble P. Barnes, President, in the chair.

SYMPOSIUM ON PSYCHOTHERAPY.

PSYCHOTHERAPY OF THE ANCIENTS.

Dr. E. L. Morgan traced the relationship between superstition, religion, medicine, thaumaturgy, psychomancy and psychic effects, from the earliest dawn of history. He showed that the subsequent appearance of astrology and chiromancy was intimately connected with psychotherapy, as was also gem therapeutics. Attention was called to the fact that all religions believed a sick man to have offended a good being or an evil one; that he was possessed with devils, which the priesthood by various methods cast out.

Four thousand years ago the Egyptian clergy practiced on the sick; the priests of Osiris and Isis cured all the ills that flesh is heir to, as did the clergy of other nations. The emerald protected women in childbirth; music stimulated the animal passions of the ancients; the king's touch cured scrofula. Heathens, Protestants and Catholics, all can produce evidences of miracles. The sight of St. Xavier cured Simon Rodriguez of fever; a dying man recovered upon seeing Martin Luther. Witchcraft and demonology had learned supporters. In the past, the psychic effect on men for good or evil can well be imagined, when com-

pared with the fads of today—those fleeting shadows, Christian Science, *et al.*

In all ages shrines have been popular. In ancient temples votive tablets, etc., were to be seen—patients' testimonials; the same are to be seen at shrines in our era. Magnetism, hypnotism, Elisha Perkins's metallic tractors (1796), metallothrapy, ancient and modern, Mesmer, *et al.*, all wrought miracles in the past. The shades of ancient therapeutics rise up before our mental vision in the Emmanuel movement, a fashionable craze.

The ancients, the church and moderns do get the desired psychic effects. Some are cured and some are mentally benefited. But from antiquity to date, failures in curing were not and have not been recorded. The force of this fashion, like the Perkins craze, will soon expend itself and pass into history, as all similar things have done in the annals of medicine.

NON-MEDICAL PRACTICE OF PSYCHOTHERAPY.

Dr. Edward H. Egbert used as the theme of his paper a statement quoted by Schofield: "The force of mind in therapeutics, so largely ignored by the profession, is generally exploited by the quacks for their own ends."

He discussed the various methods of the unethical and of the fakirs, doctors of the different "therapys" and "pathys," "professors" and "healers," showing that they conduct practice by using suggestion in various forms. He called attention to the fact that the word Doctor carried weight, and severely condemned the practice of granting the degree "Doctor of Pharmacy." Such a degree is unwarranted and invites counter prescribing, with its disastrous results to patient, physician and druggist.

False religious healers, like Dowie, exert for a time a mighty influence on the emotional, but this class of "grafters" is of little importance. Their cause is shortlived. Christian scientists (neither Christlike nor scientific) accomplish much by their suggestive treatment, though it is based upon a false and ridiculous premise. Indirectly by our neglect of psychotherapy we are building their temples and providing wealth for their leaders.

In the shadow of the head "Scientist" church the Emmanuel movement was established. The founders, men of high attainment and experienced teachers of psychology, are meeting with such marked success that clergymen less qualified are answering a "call" to take up the new movement.

While granting that spiritual advice and moral uplift are essential in the case of many self-centered and vice-stricken neurotics, he doubted if the profession was disposed to limit its endeavors to diagnosis, and then to deliver its neuropaths, both soul and body, to the medically untrained clergy.

In closing he reviewed the situation optimistically. He believed that the newspapers and religious press would, like the Cleveland press, expose the quacks even at the cost of advertising space; that the majority of druggists would find it as profitable to fill prescriptions as to assume the responsibility of prescribing; that psychology and psychotherapy would be given the time deserved in the curriculum; that physicians would cease to graduate the unfit, and that the chosen professions would meet on friendly ground each to do the work for which it has been trained.

PSYCHOTHERAPY IN NEUROLOGY.

Dr. D. Percy Hickling said: It is a recognized axiom among neurologists that psychic conditions require psychic treatment; also that where both psychic and somatic conditions exist a clear distinction should be made, not only by the physician but in the mind of the patient; it therefore follows that the more mental the symptoms the more mental must be the treatment. It is in those borderland cases which occupy the ground between health and insanity and which show no tendency to spontaneous recovery, and when uncared for naturally tend to grow worse, that psychotherapy accomplishes its great triumphs; those symptom complexes, which are known by the names of phrenasthenia, psychosthenia, hysteria, neurasthenia, the traumatic neurosis, hypochondria, the doubting manias, forms of melancholia, the mild depressions, the various phobias, imperative ideas, nervousness, myoclonus, spasms, tics and the neurotic forms of tachycardia, digestive troubles, genito-urinary diseases, suppression of the urine, nausea, vomiting, diarrhea, peritonitis and constipation, in which the condition is not physical but psychic; with the characteristic stigma of marked exaggeration of the inherent faults of human nature, the susceptibility to fatigue, sensitiveness, emotional and exaggeration of normal reaction complexes.

It is in these psychic conditions where psychotherapy must be used and which, in my judgment, cannot be replaced by any other known method of treatment; in fact, other methods of

treatment are not only of little value, but harmful; for drugs and surgery often prolong and sometimes prevent a cure; for, as Du-bois says (the psychic treatment of nervous disorders), "who would prefer to give digitalis to a patient with a rapid heart action caused by the presence of a dog, when the assurance that the animal was gentle and would not bite would accomplish the same result." And who does not remember the number of oophorectomies which have been performed for hysteria and neurasthenia, and their unfortunate results.

I would, therefore, say that the diagnosis is of the utmost importance, for it would be quite embarrassing to find our patient, whom we had called a neurasthenic and upon whom we were using psychotherapy, was really an early case of paratyphoid, multiple sclerosis, paresis or locomotor ataxia.

To outline a technique which is applicable in all cases of the functional neuroses, representing as they do such a great variety of forms, is, of course, impossible, for each case must be studied carefully and the details of any formula varied according to the requirements of each individual case.

Psychotherapy should, therefore, be used only by the well-trained physician in carefully-selected cases; for without a thorough knowledge of general medicine, as well as a special knowledge of the nervous system and its diseases, psychotherapy not only fails, but becomes dangerous. It should always be remembered, however, that anything the physician says or does is a suggestion, and, if of the proper kind, inspires hope, increases the effect of drugs and surgery, points out the road to health and gives a new lease on life. In using suggestive therapeutics you must first convince yourself, showing no doubt before your patient, and be careful never to use the inverse or counter suggestion; if you make these mistakes your results will be bad, remembering that all nervous conditions are not necessarily brought about by psychic causes and that all cases cannot be cured by psychotherapy.

PSYCHOTHERAPY FROM THE VIEWPOINT OF THE SURGEON.

Dr. L. H. Taylor: In certain surgical affections psychotherapy may be employed with advantage. Chronic diseases characterized by long continued pain are most benefited by this form of treat-

ment. Here, from prolonged irritation from the visceral lesion, the autonomic nervous system becomes intensely hyperesthetic. Sooner or later the higher psychic processes become involved, and from this involvement proceeds a host of subjective symptoms which persist after the removal or cure of the organic lesion by surgical means. Psychotherapy offers the best and practically the only means of freeing the patient of these symptoms. To be efficient it must be begun before operation, even with the initial consultation, and continued into the post-operative period. Women are more favorable subjects to deal with than men, and in my hands cases of movable kidney and diseases of the female reproductive organs have proved most amenable to the treatment.

REQUISITES FOR THE TREATMENT OF PSYCHO-NEUROSES :
PSYCHOPATHOLOGICAL IGNORANCE AND THE MISUSE OF
PSYCHOTHERAPY BY THE NOVICE.

Read by invitation, by **Tom A. Williams**, M. B., C. M., Edin., Washington, D. C.

A close analysis shows that the real cause of most so-called "nervous prostration" is failure of adjustment to environment, and is psychogenetic. A rest cure in itself is inefficacious, but gives the doctor the opportunity to re-educate the perverted trends of the patient's disposition. Before reaching the neurologist, a patient has been "suggestioned" *ad nauseam*; and such empirical therapy has failed, as has the injudicious appeal to his will power, already exhausted by the complexities, social and professional, which have contributed to his failure of adjustment.

2. To arrest a morbid train of thought and set a mind at rest is an art requiring knowledge and skill. Its attempt by untrained men has been even more disastrous than the work of the tyro in gynecology, for it is the direct cause of the rise of Christian Science, Emmanuelism and such cults. Happily, a body of experts in psychopathology is now counteracting their injurious influence; for an affectation of knowledge will not supply the public's demand for real psychic treatment. But we require greater facilities for instructing medical men in the principles of psychopathology and therapeutics; and proper wards and out-patient clinics under competent teachers should be provided, at least in every large city.

3. The most important principle in psychotherapy is that of

"conditioning" the reflexes, as revealed by Pawlow's experiments in modifying even the secretions, by stimuli chosen quite arbitrarily. In extending this principle to the associating of pleasant-feeling tones with useful activities, we can exert powerful control over such morbid tendencies as lying, bad temper, sexual perversion or insufficiency, as well as over the false fixed ideas at the root of the gastropathy usually called nervous dyspepsia, and in the hystero-neurasthenic syndrome often called traumatic neurosis, instead of, as at present, often being the actual source of the false ideas which create these syndromes. The mechanism of these has been fully discussed by the author in the *Journal of Abnormal Psychology* of February, and in a communication to the Congress on Industrial Accidents at Rome, in May, respectively. Both are forms of hysteria in that they conform to the definition of Babinski—"Susceptible of production by suggestion and of removal by suggestion persuasion."

Cases of gastric neurosis require time for cure, as they are often much emaciated and the idea is firmly fixed; but the author has found that in traumatic cases a cure may result from the effects of a single interview. The importance of a thorough knowledge of the technique for the detection of organic diseases of the nervous system cannot be too much emphasized, for an organic basis is often at the root of both hysteria and neurasthenia. Want of success in the treatment of these neuroses is due to the muddled conceptions which prevail concerning their pathogenesis.

4. A thorough comprehension of the psycho-genesis of these clear-cut states will enable the physician to apply his knowledge to the commoner and more difficult conditions of despondency, suspiciousness, facile emotionalism, religious sentimentalism, social ashamedness, weakness of character, and morbid fears, pains, besetments or other forms of inadequacy to personal and social requirements; and he will do so without the danger unavoidable to the ecclesiastic or other layman of forgetting the very frequent somatic complications the removal of which is often the key to successful psychotherapy.—[Author's abstract. See in full *Boston Med. and Surg. Jour.*]

DISCUSSION ON PSYCHOTHERAPEUTICS.

Dr. William A. White: The subject matter of psychotherapy is altogether too vast to think for a moment of touching upon all of its several aspects in a discussion of this sort. The particular

thing to emphasize, however, is that the whole subject is surrounded by a mystery which does not necessarily belong to it, because its fundamental principles are essentially simple. The individual must be considered as consisting of both body and mind. In bodily disease appeal is made by physical methods for the correction of faulty functions, while in mental disorder, in which the facts are of a mental nature, appeal must just as surely be made, oftentimes primarily, to the mind. In this way psychotherapy is constantly being practiced. [A case was cited of a man and his wife who had gradually become estranged because of certain conditions which had developed in their home life. It was shown how the whole situation was fully explained to him so that, being an intelligent man, he could understand precisely the character of the problem he had to deal with and intelligently meet it. This was given as a good example of psychotherapy.]

Many of the effects of mental disorder are nothing more nor less than the establishing of faulty mental habits, faulty methods of thinking. The habits thus established, or more properly the ideas associated with them, become more or less fixed. The individual is incapable of adjusting himself to new conditions of life. When the adjustment demanded is very radical and the individual has little adjustability, mental breakdown not infrequently occurs, and the way in which to meet these circumstances is by an appeal directly to the mind of the patient, more especially by the method of re-education, of gradually laying aside the old habits of thought and picking up and adjusting to new ones.

The taking up of the question of treatment of the so-called functional mental disorders by the clergy was deplored. Plato has said that religion was a raft whereon the individual might reach safety upon some nearby shore. Every individual has within himself the planks with which a raft of safety may be constructed. The trouble with the clergyman is that he deals only in spiritual rafts, whereas the afflicted person may need something quite different from religion, may need a philosophical raft, a common-sense raft, or many other kinds, and the physician, appreciating the need, is in a position to supply it, whatever it may be, while the clergyman is, by virtue of education, viewpoint and inclination, naturally limited in what he can supply.

Dr. Shepherd I. Franz said that in his opinion too much protest should not be made by physicians about the psychotherapeutic healing by the followers of the Emmanuel movement and other churches until they themselves have become trained to utilize the different methods of psychotherapy in an intelligent manner. Psychotherapy is not a method to be practiced by any one who wishes to do so, but it is necessary to be trained in methods of this kind of healing just as much as in the administration of drugs. For this reason the speaker emphasized a

matter on which he had previously written, viz : the introduction of courses in normal and abnormal psychology into the medical curriculum, and advocated the giving of special courses in psychotherapy, coördinate with materia medica and therapeutics. In this way graduates of medical schools would have the training necessary for them to appreciate the need of any special treatment along these lines, and suitable patients could be sent to the specialist in psychotherapy just as now patients are sent to the ophthalmologist or to the orthopedist. Another factor which had not been sufficiently emphasized was that of the mental influence of the nurse ; in some cases she has a wonderfully improving effect and at times the opposite. This factor in treatment of patients, which is largely mental, should be kept in mind, for there is a possibility for much good or ill to follow the selection of a nurse. It appeared to the speaker that the nurse should also understand something of psychotherapy, just as she should know the actions of drugs, so that there could be an intelligent coöperation between her and the physician.

IN MEMORIAM.

DR. JACOB PRESTON MILLER.

WHEREAS, The Medical Society of the District of Columbia has lost in the death of Dr. Preston Miller one of the most active, faithful and respected members ;

Resolved, That the Society take notice of the fact by inscribing a record upon the minutes and sending a copy of the resolutions to his family.*

(Signed)

E. W. WATKINS,

H. T. HARDING,

A. L. STAVELY, *Chairman*.

DR. JOHN BAILEY MULLINS.

Dr. JOHN BAILEY MULLINS was born at Norfolk, Va., on the 17th day of February, 1867. His premature death at the age of forty-two years occurred in the City of Washington, D. C., his adopted home for the past ten years, at 10.30 A. M., Thursday, February 11, 1909.

Dr. Mullins sprang from a cultivated and respected Virginia

* Adopted by the Medical Society, March 17, 1909.

parentage and spent the early years of his life in his native city, where his father, a retired officer of the army, had lived for many years. After receiving a substantial preliminary education in Norfolk and at the Virginia Polytechnic Institute, at Blacksburg, Virginia, he went to Baltimore and graduated in medicine from the University of Maryland in 1887. After equipping himself with hospital and post-graduate training, Dr. Mullins began the general practice of medicine in Baltimore, Maryland, where he acquired a busy and lucrative practice. He associated himself with the hospital of his *Alma Mater* and later developed a taste for oto-rhinology, in which department of medicine he afterwards became an adept and into which specialty he finally entered exclusively.

He married Miss Annette Kennedy in 1894, at her home in Brunswick, Mo. The loss of his wife in 1896 and his desire to practice his specialty in Washington, as well as to educate his only child, a daughter, under favorable auspices, induced him to remove to this city, which he did in 1899. In his new environment Dr. Mullins soon made a host of professional friends, associated himself with the Medical Association and Medical Society of the District, and soon acquired a large clientèle. He became assistant chief of the nose and throat service of the Emergency Hospital and Central Dispensary and affiliated with several medical societies.

Dr. Mullins endeared himself to all his acquaintances by his unaffected ability, scientific attainments and especially by his genial, affable and optimistic disposition. He made several important contributions to the literature of his specialty, and, though claimed by death almost at the threshold of his career, had acquired an enviable reputation as a skillful and conservative surgeon among his confrères.

Your committee feels that no words of theirs can adequately express the sense of great loss which all the friends of the genial and beloved Mullins share at his untimely end. We therefore move the following preamble and resolution :

“WHEREAS, Death has removed from our midst Dr. John Bailey Mullins, a member in good standing of the Medical Society of the District of Columbia ;

Be it resolved, That this Society hereby expresses its sorrow at his premature death; that a copy of this preamble and resolution

be transmitted to his daughter as an expression of sympathy to her in her bereavement, and that the same be spread upon the minutes of the Society.*

(Signed)

DUFF G. LEWIS,

HARRY HURTT,

L. FLEET LUCKETT,

Committee.

ROBERT REYBURN, A. M., M. D.

Dr. Robert Reyburn† was born August 1, 1833, at Glasgow, Scotland. He was brought to this country in 1843 by his widowed mother and was educated in the public schools of Philadelphia, Pa. He studied medicine with Dr. Lewis D. Harlann, of Philadelphia, and graduated in 1856 at the Philadelphia College of Medicine, an institution now extinct. He practiced medicine in Philadelphia until May 7, 1862, when he was appointed an Act. Asst. Surg., U. S. A., and assigned to duty in the military hospital, Alexandria, Va. June 4, 1863, he was made an Asst. Surg. U. S. Volunteers and nine days afterwards a Surgeon of Volunteers. In 1867 he was mustered out as Brevet Lieut. Colonel and appointed Asst. Surg. U. S. Army, with the rank of Captain, but resigned the same year and began the practice of medicine in Washington, and resided here until his death. During the last two years of the existence of the Freedmen's Bureau, 1871-2, he was the Chief Medical Officer. From 1867 to 1875 was Surgeon in charge of the Freedmen's Hospital, Washington. Was Professor of Clinical Surgery at Georgetown Medical School, 1866-7. Was Professor of Surgery in the Medical Dept., Howard University, 1868 to 1873; Dean of the Faculty, 1870-1. In 1873-4, was Professor of Anatomy, Georgetown Medical School. In 1880, became Professor of Physiology and Clinical Surgery, Howard Medical School. In 1900, on the death of Dr. Hood, he was made Dean of the Medical Faculty, and so continued until his death. In 1902 he was made Professor of Preventive Medicine and Hygiene.

* Adopted by the Medical Society, March 10, 1909.

† Resolutions adopted by the Society, March 31, 1909.

He was elected a member of this Society, January 16, 1867; resigned, June 8, 1870; was reelected, October 1, 1873.

He was a member of the Medical Association of this District; American Medical Association, its Librarian in 1870; of the National Microscopical Society, Vice President in 1891-2; of the Microscopical Society of Washington; Washington Anthropological Society; Biological Society; Association of American Anatomists; Consulting Surgeon Providence Hospital and Freedmen's Hospital; Visiting Physician St. John's Church Orphanage; member and President Board of Health, D. C., 1870-1; member Board of School Trustees, Washington, 1877-9; of Board of Common Councils, Georgetown, 1865; President of Medico-Legal Society of Washington, and of American Therapeutic Society.

Married in 1854 Catharine White; had six children, three of whom are physicians though not practicing—Drs. Robt. Reyburn, Jr., Ella Frances Reyburn and Eugenia Reyburn.

Dr. Reyburn was one of the attending physicians to President Garfield in 1881.

He was a very frequent contributor to medical literature; his last paper was read before this Society, October 21, 1908, on Neuralgia. His most important articles are probably those on the diseases of the Freedmen, and on the case of President Garfield.

He received the honorary degree of A. M. from Howard University in 1871.

In politics Dr. Reyburn was a Republican, and for some years was identified with a movement to secure the suffrage in this District. In religion he was an Episcopalian and a member and vestryman of St. John's Episcopal Church.

WHEREAS, Dr. Robert Reyburn, a practitioner of medicine for fifty-three years, a member of this Society for thirty-nine years and a citizen of this District since 1865, died March 25, 1909, in the 76th year of his age; therefore,

Resolved, That this Society herewith expresses its great regret at the loss of so valuable a member of this body and of so public spirited a citizen of this District, a surgeon and physician of repute, a man of literary attainments and an army medical officer of creditable record.

Resolved, That this preamble and resolutions be recorded on the minutes of the Society, and a copy be transmitted to his bereaved family.

(Signed) D. S. LAMB,
JOSEPH TABER JOHNSON,
GEO. M. KOBER,
Committee.

Dr. Lamb said, I have known Dr. Reyburn a longer time possibly than any other member of the Society. I first met him in the spring of 1862, after his appointment to the army and his assignment to the military hospital at Alexandria, Va., in which I was a convalescent. I then lost sight of him until 1865, when I was appointed to the Army Medical Museum, and did post-mortem work at the Freedmen's Hospital, of which he had charge. I was also a student of medicine, and he was a clinical lecturer in connection with Georgetown Medical School. Since 1880 we have been associated at the Howard Medical School. We were also associated as members of the Board of Directors of the Woman's Clinic. In looking back over the many years in which we have worked together, one thought that seems uppermost is that perhaps the most appropriate epitaph for Dr. Reyburn would be the words of Abou Ben Adhem, when in his vision he said to the Recording Angel, "I pray thee, write me as one that loves his fellow men."

Dr. J. Taber Johnson said: Mr. President and Fellow Members: I believe it is a good custom to interrupt for a brief period our usual order of proceedings on the occasion of the death of a fellow member, and to make sympathetic mention of the good points in his life and character.

It is apparent, from the resolutions which have just been offered by the committee and from the biographical sketch of the life of Dr. Reyburn presented by its chairman, that there is much which can and should be said of the good which entered into and proceeded out of his life, and it is principally that phase of his life and character to which my remarks will apply. As I believe, Dr. Reyburn was a good man and that he tried to make good according to his lights. He appears to have been particularly fortunate in his ancestors and in his early instruction and environment, which always count for much in the formation and solid development of character, and especially greater character. Opinions once deliberately formed, though early in life, produce characteristics which dominate in one's subsequent career with great pertinacity.

Probably his early Scotch association and his somewhat later residence among the Quakers in the "City of Brotherly Love" account, in no small degree, for his very decided opinions in

regard to the duties of citizens toward the constitution of civil governments and their protection of civil rights.

It is pleasant to dwell upon that side of his life, however, which illustrated his desire to do good and to make good. Many instances of the former, which occur in the daily work of all medical men, could be enumerated; but I leave that to others, while I will refer especially to those examples of his ambitious desire to make good which have come under my own observation or within my knowledge.

Nearly fifty years ago Dr. Reyburn entered the army as an Acting Assistant Surgeon. At the close of the Civil War he had become a Surgeon of Volunteers and had been brevetted Lieutenant Colonel for meritorious services.

In the days of reconstruction Dr. Reyburn was ordered by the Secretary of War to superintend the closing up of a number of the Freedmen's Hospitals in the States where they existed. They were all finally discontinued or merged into the one in this city, of which, by military order, Dr. Reyburn became Chief Medical Officer, a position in which he made good for some years.

Somewhat in this line of work, later on, the Howard University was established for the higher education of the colored people, by General Howard, who was in those days the Superintendent of the Freedmen's Bureau. This University had a medical department, with its headquarters in the Freedmen's Hospital, and Dr. Reyburn came almost as a natural consequence to be its first Professor of Surgery, and very soon thereafter was elected President of the College, which office, that of Dean, he held many years. These positions he might have fallen heir to in a logical way or by the influence of his superior officer, but he could not have maintained himself in the Hospital for so long and in the College for nearly forty years unless he had made good by qualities which commended themselves to the governing boards of those institutions. In a like manner he remained the Chief Medical Officer of the St. John's Orphanage for twenty-five years or more. He was so much attached to this charity that he left it \$1,000 in his will.

During that stage in the history of the government of our city when we had a Board of Health, Dr. Reyburn was appointed a member of that body, and it was not long before he was elected its President, a position in which he again made good for a year. That he made good as a surgeon is evidenced by his election as Professor of Clinical Surgery in the Georgetown College, and also by his being called as one of the surgeons to attend President Garfield during his fatal illness.

It is a fact worthy of note, also, that the political party for whose interest he worked with his usual vigor and intensity placed so much confidence in his ability and integrity as to send him as the head of their delegation to the great convention in Chicago for the nomination of President.

So also in a number of other societies, civil, military, literary, medical and religious, his force of character, pure private life and other personal qualifications, gained for him a prominence which could not have been otherwise attained or maintained for so many years. Another illustration of his making good exists in his church association, where in time he became a member of the vestry of one of the most prominent and influential churches in the city, and was reelected Superintendent of its Sunday School for twenty-three years. Surely all these evidences in favor of his again and again having made good could not exist if Dr. Reyburn had not actually been a good man.

The presence at his funeral, though announced as strictly private, of generals and judges, and among them the Honorable Chief Justice of the Supreme Court, of church officers and doctors and citizens, and great banks of floral offerings sent by grateful and sympathizing friends, all attested their belief that a good citizen, a good church officer, a good neighbor, friend, husband, parent, physician, indeed a good man had been taken from us, and their desire to give this expression of their sympathy to his sorrowing family.

Probably few of the members present know very much of Dr. Reyburn's personality, or of his ability as a surgeon, as he had already passed the allotted span of life, and during the last ten years had not been so active professionally as he was a generation ago. The mere fact, however, that he had practiced medicine for a period of fifty-three years, and that our Society recently presented him a set of resolutions congratulating him upon having honorably reached his semi-centennial of professional life, constitutes a notable event in his career, as it would be in the life of any man.

The corresponding secretary has been called upon to transmit similar congratulatory resolutions to less than a dozen of our members who had attained this number of consecutive years of medical practice since the foundation of our Society.

It is an event worthy of note, and congratulation also, that a man who had lived to be nearly seventy-six years of age, and had taken a man's fighting part in the stirring events of his times, who had received and given many hard blows during his vigorous manhood, should at its close entertain so little of bitterness toward anyone. I think if he could have given final expression to his feelings he would have said, that he had ever acted according to the logical dictates of duty as it was given to him to see his duty, and he earnestly hoped that all bitterness toward him would soon cease as the memory of its occasion faded in the dim and quiet distance.

We can all join in the hope that as he has put off his fighting armor, he has wrapped about him a more quiet and peaceful mantle and has laid down to restful and pleasant dreams.

Dr. James D. Morgan said : As a child, even before I thought of studying medicine, I can remember Dr. Robert Reyburn. He was a great friend and admirer of the late Dr. Johnson Eliot, and Eliot and the late James E. Morgan were great friends, and so it happened that Reyburn, Eliot and Morgan were often thrown together. Dr. Reyburn had a gentle, kind and attractive personality and was particularly fond of children. Among the many impressions made on my mind at that time was that Eliot and Morgan did not agree with Reyburn on the negro question. Since I have grown older and have read of the stormy times in the Medical Society and Association in 1870, I can better appreciate why there was one subject nearly always uppermost. In later years I have grown very fond of Dr. Reyburn and admired his genial spirit and many admirable traits.

Dr. Reyburn has taken a prominent part in our city ever since his advent in 1864. His hospital experience during the Civil War, told in his "Reminiscences of Fifty Years," gives a very good idea of the surgery and medicine of those times. He has from the start been a teacher and promoter. As early as 1866 he was connected with the Georgetown Medical School, and later became full professor in the Howard Medical School. The modesty and stability of the man can be told in his own few words when he writes that "he had never the advantages of a thorough collegiate training, but had endeavored to make up this deficiency by study at home." Only within the last month he showed his taste for books and research by making application for membership in the Columbia Historical Society. He was always for advancement, and was one of the first to advocate at Howard University "day instruction" and post-graduate courses. He will be missed as an exemplar of a steady, persistent and conscientious worker, and as a charitable and lovable character.

Dr. Kober said : I desire to add my humble tribute to the memory of Dr. Reyburn. He was my preceptor thirty-six years ago, and I found in him a most excellent teacher and friend. It is needless to point out that a man of his brilliant army record, having passed the competitive examination for entrance into the regular Medical Corps, was well informed in all the departments of Medicine and Surgery, and I gratefully acknowledge my indebtedness to his sound teaching and general learning.

Perhaps one of his most striking attributes was his steadfast devotion to the education of the colored race. His position as Chief Medical Officer of the Freedmen's Bureau brought him into close contact with those people, and it is perfectly natural that a man of his sympathetic nature should have taken a deep interest in uplifting influences for the colored race. At all events, I am confident that this spirit animated him and a few others of our older members in devoting their best years to the medical education of the colored race. I know that he gladly

gave up his Georgetown College connections in order to prove useful to his less resourceful brother, and I also know that his associate, Dr. Lamb, could long ago have enjoyed a professorship in his *alma mater* had he not preferred to follow the path he had chosen. There was a time when the performance of such voluntary duties involved considerable courage and self denial, and perhaps their only reward is the approval of their consciences for "duties well done."

I feel that Dr. Reyburn's devotion to higher medical education and unselfish motives had more to do with the erection of the new Freedmen's Hospital than any other one factor. One of the most pleasing events of my life was when I could present to the Senate Committee on Appropriations the history of the pioneer work of these educators, what they had accomplished in the past, and what more could be accomplished with a properly equipped University Hospital. Dr. Reyburn has led a most useful life, and it is to be hoped that his beneficent work in the interest of the colored race will bear good and ample fruit.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, February 17, 1909.—The President, Dr. E. A. Balloch, presided; about 80 members present.

The Society ordered that the meeting for March 3d be dispensed with on account of the inauguration festivities.

Dr. Thomas Morgan Rotch, of Boston, addressed the Society upon "The Milk Laboratory in the Problem of Infant Feeding." Illustrated by lantern slides. A rising vote of thanks was given to him.

Wednesday, February 24.—The President, Dr. Balloch, presided; about 70 members present.

A letter was received from the Treasurer of the George Washington University giving assurance of relief from the annoyance arising from the operation of a gas engine in the building.

The Chair announced the death of two members of the Society, Drs. J. Preston Miller and John Bailey Mullins. The following committees were appointed to present suitable resolutions of respect: For Dr. Miller, Drs. Stavely, E. W. Watkins and H. T. Harding. For Dr. Mullins, Drs. D. G. Lewis, Luckett and Hurtt.

The Corresponding Secretary presented a letter from Dr. Frank Baker, Secretary of the Washington Academy of Sciences, re-

questing information as to the requirements of the Medical Society for an assembly room in the Cosmos Club, having in view the contemplated construction of such an assembly room for the use of the affiliated societies in the Academy of Sciences. On motion, the letter was referred to a committee appointed by the Chair: Drs. McLaughlin, Shute and Van Rensselaer.

Dr. H. D. Fry presented a specimen showing a Lumbricoid Worm in an Ovarian Abscess, and related the history of the case. Discussed by Drs. S. S. Adams, Atkinson, I. S. Stone and G. Brown Miller. See p. 119.

Dr. Hickling reported a case of Acute Yellow Atrophy of the Liver, and presented the specimen. Discussed by Drs. Kober and I. S. Stone. See p. 120.

Dr. Hasbrouck reported a case of Brain Tumor, and presented the specimen. Discussed by Drs. Jack, Carr, Williams, Shute, Randolph and Hasbrouck. See p. 124.

Dr. Motter delivered the essay for February: "The United States Pharmacopoeia and the District of Columbia." Discussed by Dr. Lochboehler.

Dr. A. F. A. King read a "Review of Obstetrics." Discussed by Drs. Fry and King. See p. 109.

Wednesday, March 10.—The President, Dr. Balloch, presided.

The Corresponding Secretary announced an invitation to the members of the Society to attend the Staff Meeting at the Government Hospital for the Insane for March. He had received this invitation too late for announcement on the program cards.

The Treasurer presented his report for February, showing: Receipts, \$55; disbursements, \$22.

The following were elected to membership by invitation: Dr. Geo. W. Stiles, Bureau of Chemistry, Department of Agriculture; Dr. S. H. Dickson, Medical Inspector, U. S. Navy. Dr. Dickson, being present, expressed his appreciation of the action of the Society.

Dr. D. G. Lewis, chairman of the committee, reported resolutions of respect to the memory of Dr. John Bailey Mullins, which were adopted. See page 134.

The following preamble and resolutions proposed by Dr. T. C. Smith were adopted:

"WHEREAS, Dr. Joseph Theophilus Howard has this day been a graduate in medicine fifty years, and for forty-five years a member in good standing in the Medical Society of the District of Columbia, during which time he has been a most exemplary practitioner, always upholding the honor and dignity of the profession, thereby earning and deserving the confidence and respect of the community and his professional brethren; therefore

"Resolved, That the Society extends to Dr. Howard its hearty congratulations and good wishes, and expresses the hope that his

useful and honorable life may be prolonged for many years in health, happiness and prosperity.

"Resolved, That this testimonial be spread on the minutes, and a copy duly authenticated be forwarded to Doctor Howard."

An announcement of the approaching competition for the Warren Triennial Prize was read and referred to the Editorial Committee for publication in the ANNALS.

The program being a Symposium upon Tuberculosis, Dr. L. L. Flick, of Philadelphia, addressed the Society. He was followed by Gen. Sternberg, Dr. J. Dudley Morgan and Dr. Fremont Smith. Dr. S. S. Adams read a short paper upon the occurrence of the disease in children.

Wednesday, March 17.—The President, Dr. Balloch, presided; about 50 members present.

Dr. Stavelly, from the committee, presented resolutions of respect to the memory of Dr. J. Preston Miller, which were adopted.

An invitation was received from the Secretary of the American Society for the Study of Alcohol and other Narcotics, requesting the attendance of members of the Society at its meetings.

Dr. Monte Griffith spoke on "Tuberculosis of the Eye," in continuation of the symposium upon tuberculosis. Dr. Dunlop transmitted a paper upon the "Orthopedics of Tuberculosis," which, in his absence, was read by the Secretary. Discussed by Drs. A. F. A. King, Gwynn, Kober, O. M. Muncaster, Chappell, S. S. Adams, O. Wilkinson and J. D. Thomas.

Dr. Oscar Wilkinson read a paper entitled "Exophoria; its Symptoms, Significance and Treatment." Discussed by Drs. Griffith, S. B. Muncaster and Henning. See p. 104.

Wednesday, March 24.—The President, Dr. Balloch, presided; about 70 members present.

Dr. A. F. A. King offered the following resolutions, which were unanimously adopted:

"INASMUCH as Dr. Harvey W. Wiley is personally known to many of us as a man of sterling integrity, courage and persistent justice, and while we also know him to be an accomplished and skillful chemist; therefore,

"Resolved, That we heartily commend and endorse his arduous and difficult work in protecting the American people from poisons, impurities and adulterations in their foods, drinks and medicinal remedies, and we earnestly trust that his humane efforts will be generously sustained by the powers of Government, supported by the cordial sympathy of his professional colleagues, and encouraged by the sincere appreciation of a grateful populace.

"Resolved, That a copy of the above, signed by the President

and Secretary of the Society, be sent to the *Journal of the American Medical Association* for publication."

A letter from Dr. J. C. Boyd, Medical Director, U. S. N., invited the members of the Medical Society to attend the closing exercises of the Naval Medical School.

Dr. Hasbrouck reported a case of Traumatic Epilepsy which had been treated by operation. The patient was presented.

Dr. S. S. Adams reported a case of Epidemic Cerebro-spinal Meningitis, cured by the use of the Flexner serum. This patient also was presented. Discussed by Drs. A. F. A. King, Chappell, Behrend, Hickling, J. D. Morgan and Adams.

Dr. Wm. P. Spratling, of Baltimore, read a paper upon "The Rational Treatment of Epilepsy." Discussed by Drs. Wm. A. White, Carr, P. C. Hunt, Shute, Hickling, Williams, A. F. A. King, Kober and Spratling. A vote of thanks was given Dr. Spratling for his presentation of the subject.

Wednesday, March 31.—The President, Dr. Balloch, presided; about 60 members present.

An appropriation of \$154.50 was granted for the last edition of the ANNALS.

Dr. D. S. Lamb requested information for the Committee on History as to the origin of the custom of appointing reviewers of the several branches of medicine; he had been able to find no record of any action of the Society in regard to it. Dr. McLaughlin replied, stating that in his retiring address in 1905 he had recommended the practice and had invited several gentlemen to review the various departments of medicine. The custom had been continued by succeeding presidents.

Dr. Lamb, also for the committee of which he was chairman, the other members being Drs. Jos. Taber Johnson and Geo. M. Kober, presented a biography of the late Dr. Robert Reyburn and proposed resolutions of respect to his memory. The resolutions were adopted by unanimous vote, and remarks upon the life and work of Dr. Reyburn were made by Drs. Jos. Taber Johnson, Jas. Dudley Morgan, Chappell and Kober.

Dr. Wm. A. White read the essay for the evening, the title of which was: "The Theory of the Complex." Discussed by Drs. Hickling, Williams, Carr, Shute and White.

CHILDREN'S CHILDREN.—An eight-year-old girl asked her father: "Daddy, have I any children?" He replied, "Well, I should hope not; why do you ask?" She answered: "Why, in church this morning the minister preached about children's children, and I wondered if I had any."

WASHINGTON MEDICAL ANNALS.

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Editorial.

IMPORTANT NOTICE TO NEW MEMBERS OF THE SOCIETY.—The members who were elected April 7th are informed that a History of the Society is now *in press*—nearly 200 pages already printed. Members who desire to have their photographs reproduced in the volume will send the said photographs as soon as practicable to the Chairman of the Committee on History, Dr. D. S. Lamb, at 2114 Eighteenth Street, N. W.

Biographical sketches of members will appear in the volume, and the following data are suggested: the full name; date and place of birth; degrees conferred, medical and otherwise, giving year and institution conferring; service in army, navy and marine hospital service; hospital connections; college connections; marriage, date and to whom; anything else of interest, either of medical or civic character. The sketches should be sent with as little delay as possible to Dr. Lamb, at the above address.

THERE IS A MOVEMENT to provide a fund for Dr. Wm. B. Atkinson, of Philadelphia, Pa., formerly Permanent Secretary of the American Medical Association. It is said that he is in destitute circumstances. The subject will probably be brought before the Association at its next meeting.

THE ST. LOUIS MEDICAL SOCIETY requests that members of the Medical Society of this District send reprints of their articles to the Secretary of that Society.

THE XVITH INTERNATIONAL MEDICAL CONGRESS.—Secretary-General, Professor Emil Grósz, M. D.—Office, Budapest, VIII, Esterházy-uteza 7.—In accordance with the resolution passed at Lisbon on the 26th April, 1906, the XVIth International Medical Congress will be held at Budapest from the 29th August till the 4th September, 1909, inclusive.

THE AMERICAN PROCTOLOGIC SOCIETY will hold its eleventh annual meeting at Atlantic City, N. J., June 7 and 8, 1909. Headquarters and place of meeting, Haddon Hall. A preliminary program has been issued, giving the titles of twenty-six papers. Dr. T. C. Martin is the only Washington member.

BARNES MEDICAL COLLEGE, St., Louis, Mo., sends a circular, setting forth the results of the examinations for registration in Missouri for 1908, and particularly indicates the percentages of failures of the Missouri medical schools :

Med. Dept. Univ. Mo., no failures.

St. Louis Univ., failures, 9.3 per cent. of those examined.

Washington Univ., 12.5 per cent.

Barnes Univ., 15.5 per cent.

American Med. College, St. Louis, 28.5 per cent.

Univ. Med. College, Kansas City, 33.3 per cent.

Homeopathic Med. College, St. Louis, 43.7 per cent.

Hahnemann Med. College, Kansas City, 44.4 per cent.

Ensworth Med. College, St. Louis, 46.6 per cent.

College Phys. and Surgeons, St. Louis, 52 per cent.

THE MEDICAL SOCIETIES OF WASHINGTON.—*The Hippocrates Society*, the object of which is "the cultivation and promotion of knowledge in whatever relates to the science of medicine and surgery," will meet as follows: May 13th, at Dr. J. Lewis Riggles', The Champlain; essay by Dr. Riggles. May 27th, Smoker and President's Address. The membership in this Society is limited to 25. The President for this season is Dr. D. G. Smith; Secretary, Dr. J. H. Holland.

The Therapeutic Society of this District meets on the second

Saturday of each month at the rooms of the Pharmaceutical College, 808 I Street, N. W. ; Secretary, Dr. S. R. Karpeles.

Other societies, desirous of being noticed in the ANNALS, will please send notice of meetings, etc., to the Chairman of the Editorial Committee.

EXCHANGES.

Annals Gynecology and Pediatrics.

Buffalo Medical Journal, March and April.

California State Journal of Medicine, March and April.

Colorado Medicine, March and April.

Cronica Medica Mexicana, March and April.

Folia Therapeutica, London, January.

Journal Kansas Medical Society, March and April.

Journal Medical Society New Jersey, March and April.

Journal Michigan Medical Society, March and April.

Journal Missouri State Medical Association, April.

Journal South Carolina Medical Association, March and April.

Louisville Monthly Journal Medicine and Surgery, April.

Maryland Medical Journal, March and April.

Medical Times, New York, March.

Modern Medicine.

Monthly Cyclopedia and Medical Bulletin, March.

New York State Journal Medicine, March and April.

Northwest Medicine, March and April.

Old Dominion Journal, March and April.

Pacific Medical Journal, March and April.

Pathologica Genoa, February, March and April.

Proctologist, March.

Providence Medical Journal, March.

School Hygiene, March.

Texas State Journal Medicine, March and April.

West Virginia Medical Journal, March and April.

PUBLICATIONS RECEIVED.

Transactions Tenth Annual Meeting American Proctologic Society, 1908.

Annals of the Clin. Laboratories.

Chicago Night University Bulletin, February 27, 1909.

New and Unofficial Remedies, 1909.

Dr. Walter A. Wells, Washington, D. C., two reprints as follows: "Danger Signals in Inflammation of the Ear;" "Two Cases of Mastoiditis with Intracranial Complications."

Confiscatory Legislation.

Dr. Frank Hagner, Washington, D. C., a series of reprints as follows: "The Operative Treatment of Acute Gonorrheal Epididymitis; a further Report of the Same;" "A Metallic Tube for Continuous Irrigation for Use after Prostatectomy;" "The Bottini Operation and Report of Twenty Cases, with Remarks on a New Instrument."

Drs. Francis R. Hagner and Homer G. Fuller, "Sterility in the Male; Its Causes and Surgical Treatment;" reprint.

Annual Report of the Surgeon General U. S. P. H. and M. H. S., for 1908.

Bull. 48, P. H. and M. H. S., December, 1908, "The Physiological Standardization of Digitalis."

A. L. Stavely, "Acute and Chronic Gastro-mesenteric Ileus, with Cure in a Chronic Case by Duodeno-jejunosomy;" reprint, 1908.

G. M. Guiteras, of the U. S. P. H. and M. H. S., "The Prophylaxis of Yellow Fever;" Bulletin No. 17, February, 1909.

W. T. Belfield, "The Sterilization of Criminals and other Defectives by Vasectomy;" published by the Chicago Society of Social Hygiene.

G. F. Lydston, "How Simmons, our Peerless Leader, became a Regular."

U. S. Naval Medical Bulletin, April, 1909.

Medical Miscellany.

Studies on the Thyroid Gland.—Reid Hunt and Atherton Seidel, of the Public Health Service, in Bull. No. 47, 1909, report the results of experiments to determine the relation of iodine to the physiological activity of thyroid preparations, and conclude, page 112, that when potassium iodide or iodoform is given to dogs their thyroids show a greatly increased percentage of iodine and are much more active physiologically; the only possible explanation was the increase in iodine content. Thyroid rich in iodine is therefore more active than thyroid poor in iodine; the iodine is the cause of the increased activity.

Perforation of Femoral Artery by an Osteophyte.—Rodman, in *Annals of Surgery*, March, 1909, page 427, reports a case. Man, age 30, for fifteen years had a disease of femur, with sinuses and discharge of dead bone. After repeated hemorrhages that were controlled only by packing with gauze, the femoral artery was ligated, with the result that there was no bleeding for a week; bleeding then recurred. The artery was again ligated and again there was no hemorrhage for a week, and again it recurred. It was then decided to amputate. After removal of the limb it was found that both artery and vein were cut by two sharp spicula of bone. The femur was over twice its normal size. "It is hard to understand why gangrene did not ensue." The man recovered.

Gout; Its Treatment with Thyminic Acid.—Fenner, in the *Lancet*, December 19, 1908, considers this subject. Thyminic acid is now made synthetically. Fenner has had good results from its use in gout. The theory is that both thyminic and uric acid are produced in the blood by the oxidation of the purin bodies. Normally the two acids should combine; in gout they do not, or the combination is unstable. If thyminic acid can be introduced into the blood in sufficient quantity to retain the uric acid free in the circulation, the desired result is obtained. Fenner gives thyminic acid in four-grain doses daily after meals, say for three months; afterwards, every alternate week. It is not always successful in acute conditions unless associated with the use of mercurials and colchicum, or colchicine with aspirin; as symptoms abate thyminic acid in large doses is used and the x-ray light bath.

Bleached Flour.—Ladd and Bassett, *Jour. Biolog. Chemistry*, March, 1909, page 85, after a series of experiments, draw conclusions, of which the following may be stated here: The bleaching agent acts on the fat of the flour. Artificially the unbleached flour is digested in not quite five hours; the bleached requires over eight and a half hours. Pancreatic digestion of unbleached flour took place in 2.31 hours, the bleached in 3.19 hours. The bleaching agent is antiseptic. The action on the gluten is apparently a diazo reaction.

Vasectomy; the Sterilization of Criminals and other Defectives.—Belfield, the Secretary of the Chicago Society of Social Hygiene, publishes a four-page statement under the auspices of the Society, setting forth the status of this operation in the conditions named. The letter first invites attention to the fact that the number of criminals and defectives has greatly increased during late years; twice as fast as the population. The Indiana

legislature has legalized vasectomy as a means of preventing procreation by criminals and defectives. Oregon has just passed a similar law, and a similar law is now pending in the Illinois legislature. As a result of the law in Indiana over 800 confirmed criminals have been thus sterilized; in 200 the operation was at the request of the criminals themselves. The operation is simple, without danger and effective; can be done in the physician's office.

Effects of Electricity.—Dr. E. A. Spitzka, *Jour. Med. Society of New Jersey*, April, 1909, has examined, post mortem, thirty-six persons who were electrocuted. He considers these and other reported cases of electrocution, either intentional or accidental, and concludes as follows: Death by electricity is chiefly due to paralysis of heart or asphyxia, or both combined. The cessation of respiration is secondary, though usually simultaneous with cessation of heart action. Where, however, there is a high-tension current with good contact there is usually no heart paralysis, but only respiratory failure; and in such cases respiration may be resumed or artificial respiration should be used. In cases of accident, contact is usually poor and the tension is low; therefore, paralysis of heart is more probable, and in such cases artificial respiration is useless.

In cases of accident the prognosis is good only in those cases in which there is some heart action and some respiration. Treatment must be prompt; no time to lose. When the patient is freed from the current he should be laid with head a little higher than the rest of the body, in order to prevent serious hemorrhages; artificial respiration should be begun promptly. This is best done by compressing the chest with the hands applied flat to the sides and lower part of the chest, at the rate of eighteen per minute. Tongue drawn forward so as not to obstruct the larynx. Care should be taken not to force the contents of the stomach up into the pharynx and air passages. Regular massage over the heart, faradization (electrodes to neck and heart region) and adrenalin injections (Crile method). The adrenalin should be injected into an artery. The epiglottis may be tickled with the finger to assist in inducing respiration. Lumbar puncture to relieve pressure on brain and spinal cord has been used. Venesection may also be used. The Leduc electric current has been used.

The Influence of Radium Rays on Life Processes of Plants.—Gager, in *Popular Sci. Mo.*, March, 1909, page 232, concludes an article on this subject by stating that repeated experiments indicate that radium rays stimulate the physiological processes of plants, provided the strength of the radium, the duration of exposure and other conditions are suitable; but if the radium is too

strong and exposure too prolonged the function may be inhibited or even the plant destroyed. There are differences in sensitiveness in individual plants and even individual tissues; embryonic and younger tissues are more sensitive than older and more mature.

The Oral Administration of Antitoxins.—McClintock and King, in *Jour. Infect. Diseases*, February 18, 1909, page 64, state that toxins and antitoxins, when given by mouth, are usually rendered inert by the digestive processes. Their therapeutic or immunizing value is uncertain and unreliable. If digestion is inhibited, and this can be done by appropriate drugs, the toxins and antitoxins are absorbed unchanged and apparently in sufficient quantity and uniformity to warrant the use of this method for therapeutic and immunizing purposes.

To carry out the idea, about half an hour before giving antitoxin to children give a glass of one per cent. solution of sodium bicarbonate. When the antitoxin is given add to it one minim fluid extract of opium and four to ten minims saturated solution of salol in chloroform. Food should not be given for at least four hours before giving the antitoxin. There is no danger in this method and the cost may be materially lessened.

Diabetes Mellitus and the Pancreas.—Cecil, *Jour. Exper. Med.*, March 1, 1909, reports the results of a study of the pathological anatomy of the pancreas in ninety cases of diabetes mellitus. On page 282 he gives his conclusions, as follows: Anatomical lesions of the pancreas occur in more than seven-eighths of the cases of diabetes mellitus. The islands of Langerhans show changes, such as sclerosis, hyaline degeneration, infiltration with leucocytes and hypertrophy. Sometimes the lesion is limited to these islands. The average duration of the disease in these cases varies from eleven months to over three years. In bronze diabetes we find pigmentation and destruction of the islands.

Fifty per cent. of the cases of diabetes mellitus occurring before the age of 30 are associated with lesions of the pancreas; after that age 97 per cent. are so associated.

Interacinar pancreatitis occurs in 73 per cent. of all cases of diabetes mellitus and is constantly associated with arteriosclerosis; in one-fourth of these cases we find also gangrene of the extremities.

Action of Glandular Extracts on the Uterus.—Scott, same journal, page 330, states that of all the extracts those of the mammary gland and prostate are the most energetic on the uterus. Mammary glands secrete or contain a substance which stimulates the uterine muscle.

"Is the Human Body Supplied with an Autoprotective Mechanism?"—Sajous, *New York Med. Jour.*, February 27, 1909, page 434, after a lengthy consideration of the subject, states that there is such a mechanism; its functions harmonize with the views of the modern biochemist, who has found that increased metabolism is a characteristic of the febrile process; they also coincide with the observations of the bacteriologist, that while most pathogenic bacteria thrive at the normal temperature of the body they promptly die when it is raised several degrees. Clinical experience teaches that mortality is greater in apyretic cases than in active fever. The harmful influence of hyperpyrexia is explained, since excessive immunizing activity means proteolytic destruction of the blood cells (hemolysis) and even the tissue cells (autolysis) besides the pathogenic agents themselves. The use of vaccines, antitoxin, mercury and the iodides tends to raise temperature, a proof that the immunizing process is active. The pernicious influence of an excessive defensive reaction is shown in the genesis of arteriosclerosis, hepatic cirrhosis, endocarditis, acute yellow atrophy of the liver, acute chorea, acute rheumatism, etc. The Widal test is explained; also the serodiagnostic and prognostic tests of Arloing and Coumont.

Meningococcus Carriers.—Huebener and Kutscher (*Deutsch. Mil. Zeit.*) report examination of 54 soldiers who had catarrh of the upper air passages, in four of whom the meningococcus was found in the throat. None of the men had been in contact with patients who had meningitis. At a second examination of 400 healthy men the meningococcus was found in eight cases.

Annual Report Surgeon General Public Health and Marine Hospital Service United States, for 1908.—This very interesting report, with its index, covers 220 pages. It discusses fully the plague invasions in the United States for 1907-8, especially that at San Francisco; the story of how the rats and fleas were pursued and destroyed and the plague thereby stamped out is told; the need especially of concreting stables; the bad condition of the sewers; the handling of the sick; there were 159 cases in San Francisco, 77 deaths; the prevalent flea was the *ceratophyllus fasciatus*; the defects of the rat guards of vessels; the complete destruction of the rats on shipboard, and not only the rats but the other vermin, such as mice, bedbugs, roaches, etc. In the résumé, page 179, Dr. Wyman says that "Since the plague is carried by rats, and rats are carried from one country to another by vessels, and fifty-one countries have thus become infected with plague, and since the destruction of rats on vessels is a practicable procedure, it would seem a reasonable proposition to bring about an international agreement for the destruction of rats on vessels in all the harbors of the civilized world."

The work done toward the standardization of serums is also stated. "The thermal death point of the tubercle bacillus was redetermined; it was found that 60 C. for twenty minutes would kill the bacillus under ordinary circumstances." Of 104 dairies, the milk of which was examined, about 11 per cent. were distributing milk containing the bacillus.

The water and ice supplied to interstate trains and vessels is a source of danger to the public health.

Not one case of plague in human beings or rats was known to have occurred in the Philippines.

Many water tanks in ships in the Philippines were thoroughly infected with the ameba.

Radium in Diagnosis and Treatment—Williams, in *Boston Med. and Surg. Jour.*, March 11, 1909, says that the cases best suited for treatment by radium are the early epitheliomas; improvement takes place soon in these cases; the duration of the disease is much less than with the use of the x-rays. The radium used is the pure salt, 50 mgm. Radium has no value in diagnosis.

Ovarian Cyst with Twisted Pedicle in a Child Three Months Old.—Lund, in *Boston Med. and Surg. Jour.*, April 1, 1909, reports a case. The cyst was about ten inches in diameter and was removed, and the infant recovered. The other ovary contained two cysts each the size of an almond.

Fees for President McKinley's Physicians.—The *New York Medical Journal*, March 20, 1909, states that the fees paid to the physicians were as follows: Drs. M. D. Mann, \$10,000; H. Mynter, \$6,000; C. McBurney and Roswell Park, each \$5,000; C. G. Stockton and E. G. Janeway, each \$1,500; H. G. Matzinger, \$750; W. W. Johnston, E. W. Lee and H. R. Gaylord, each \$500; N. W. Wilson, \$250; and G. McR. Hall and E. C. Mann, each \$200.

In the U. S. Naval Medical Bulletin for April, 1909, are some interesting articles. Wright makes a further report in regard to the use of deep injections of mercury in tuberculosis; the results appear to be favorable to the use of the remedy. Dr. G. T. Smith recommends the ice bag in typhoid fever, and Alderman recommends colon irrigation in some cases of the fever. Holcomb describes an incinerator furnace, with illustrations, used at the Naval hospital camp at Norfolk, Va. Cohn reports a case of malignant endocarditis following chancreoid. Grieve reports a case of multiple bites by a bear, with infection; illustrated. Curl and H. W. Smith report a case of successive abscesses of liver. Field gives a synopsis of eleven cases of cerebrospinal fever; there was a lack of correlation between the pulse and temperature curves,

and the temperature curve was absolutely unreliable as a means of prognosis. The prognosis was more favorable in those cases in which the retraction of the head was the more marked. McLean reports the disease known as "gangosa" in Haiti; it had been considered to be confined to certain Pacific islands. Garton discusses the question of the protection of the ear drums of the gunners with "plasticine;" it was found to be better than cotton. Garton reports fourteen cases of gonorrhea treated with gonococcic vaccine; it was found to be a useful adjunct to other treatment. H. W. Smith has an illustrated article on the sterilization of catgut.

The Existing Relations between the General Practitioner of Medicine and the Specialist.—Dr. J. Wesley Bovée, Washington, D. C. *Annals of Gynecology and Pediatrics*, Boston, Jan. 1909.

Bovée believes that it is the duty of the general practitioner to secure counsel from the specialist whenever, in his judgment, he has not sufficient skill to bring to his patient the best treatment. The general practitioner should have a knowledge of special branches, as well as practical experience, yet the practitioner must realize that the field of medicine is too large for an individual to master its daughter specialties, and the man who devotes himself to but one line of work must of necessity be more competent in his respective branch. Bovée states that two general criticisms may be offered: first, delay in the operative treatment of malignant diseases, and, second, effort on the part of the physician to become a surgeon. The practitioner, as a rule, lacks the surgical material, and finds it impossible to improve his manipulative dexterity and develop sound judgment. On the other hand, Bovée points out a failing of the specialist. A patient referred by the family physician is referred to a specialist in diseases of the stomach, who, in turn, advises an ophthalmologist, etc. The plain duty of the specialist is to refer the case back to the physician from whom the patient came.—C. S. W.

Hernia and Its Treatment.—Dr. Murat Willis, Richmond, Va. *The Old Dominion Jour. of Med. and Surg.*, Jan., 1909.

Willis blames the profession for the ignorance displayed by the laity regarding hernia. A large number of individuals hold their lives in jeopardy, chiefly because they have no knowledge of the curability of the affection. Neurasthenia is not an uncommon sequence to hernia, although the relation has not been well noted.

The operation for its cure entails certain risks, namely, hemorrhage from the omentum, accidental puncture of a vessel, and infection. In the operative procedure of femoral hernia Willis believes the minimum work ensures the best results within reasonable limits, and that all that is necessary is the high ligation of the sac, closure of the external wound and elevation of the foot of the bed.—C. S. W.

THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

(CHARTERED 1819 AND 1838)

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Borden, Wm. C.,	1801 V street, n. w.
Boswell, Archie Ward,	928 Maryland avenue, n. e.
Bovée, John Wesley,	The Rochambeau.
Bowen, William Sinclair,	Stoneleigh Court.
Boyd, George Washington, <i>Phar. D.</i> ,	121 2d street, n. e.
Bradfield, Jefferson Davis, <i>Phar. L.</i> ,	1506 North Capitol street.
Brecht, Nelson DuVal,	609 22d street, n. w.
Briggs, John Bradford, Jr., <i>B. S.</i> ,	1219 Conn. avenue, n. w.
Bromwell, Josiah Robson,	1147 Connecticut avenue, n. w.
Brooks, Floyd Vernon,	Bond Building.
Brown, Charles W.,	1411 K street, n. w.
Brumbaugh, Gaius Marcus, <i>M. S.</i> ,	905 Mass. avenue, n. w.
Bryan, Joseph Hammond,	818 17th street, n. w.
Buck, John R.,	1646 Irving street, n. w.
Bulkley, John Wells,	1612 I street, n. w.
Burton, Geo. Correl,	The Champlain.
Butler, William Kennedy, <i>A. M.</i> ,	1207 M street, n. w.
Byrns, William Francis, <i>A. M.</i> ,	1923 Calvert street, n. w.
Cabell, Julian May,	The Rochambeau.

*Members are requested to report errors in name or address to the Editorial Committee and Corresponding Secretary.

- Callan, Cornelius Van Ness, 1816 M street, n. w.
 Carmichael, Randolph Bryan, 818 17th street, n. w.
 Carr, Wm. Browne, The Alabama.
 Carr, William Phillips, 1418 I street, n. w.
 Carrico, Albert J., 2903 14th street, n. w.
 Chadwick, DeWitt Clinton, The Burlington.
 Chamberlin, Frank Tenney, 1323 M street, n. w.
 Chappell, John Wm., *B. S.*, 3901 Grant Road, Tenleytown, D. C.
 Clark, Wm. Earl, The Rochambeau.
 Claytor, Thomas Ash., 1315 New Hampshire avenue, n. w.
 Cole, Geo. Robt. Lee, *Phar. D.*, 418 7th street, s. w.
 Cole, John Thos., 820 H street, n. e.
 Collins, Charles Read, 1641 K street, n. w.
 Compton, William Penn, 1709 H street, n. w.
 Cook, George Wythe, *LL. D.*, 3 Thomas Circle.
 Cook, Richard Lloyd, 3 Thomas Circle.
 Copeland, Edgar P., The Rockingham.
 Corey, George Boaz, 1803 Newton street, n. w.
 Coumbe, Oscar Henry, 248 Delaware avenue, n. e.
 Cox, S. Clifford, 2018 I street, n. w.
 Crawford, C. Alexander, Paris, France.
 Crook, Harrison, The Sherman.
 Crosson, Henry Joseph, 1746 M street, n. w.
 Crush, B. Alice, 1411 Harvard street, n. w.
 Cuthbert, Middleton Fuller, 1462 Rhode Island avenue, n. w.
 Dabney, Virginius, 1309 Connecticut avenue, n. w.
 Darnall, M. Hubbard, 2319 Pennsylvania avenue, s. e.
 Davis, Carl Lawrence, 1342 Q street, n. w.
 Deale, Henry Buckmaster, *A. M.*, 1207 Connecticut avenue, n. w.
 Dillenback, William J., 1344 R street, n. w.
 Dixon, Henry Marshall, 2013 I street, n. w.
 Dixon, Taylor Boyd, 1516 R street, n. w.
 Donnally, Harry Hampton, *A. M., B. S.*, 1018 14th street, n. w.
 Dorsey, John Sedwick, 20th street and Rhode Island avenue, n. e.
 Dowling, Thos., 225 New Jersey avenue, n. w.
 Duffey, Hugh Clarence, 929 O street, n. w.
 Dufour, Clarence Ruter, *Phar. D.*, 1343 L street, n. w.
 Dunlop, John, *B. S.*, 1309 Connecticut avenue, n. w.
 Dunne, Anna Bartsch, Ridgway, Pa.
 Dye, Hobart Southworth, 1406 L street, n. w.
 Egbert, Edward H., 1736 Columbia Road, n. w.
 Eliot, Johnson, 718 H street, n. e.
 Eliot, Llewellyn, *A. M.*, 1106 P street, n. w.
 Elliott, Henry Randall, Jr., The Farragut.
 Emmons, Charles M., *LL. M.*, 1100 Pennsylvania avenue, s. e.
 Erbach, Amelia, 709 East Capitol street.
 Erving, Emma Lootz, *A. B.*, 922 17th street, n. w.
 Erving, William Gage, *A. B.*, 922 17th street, n. w.
 Evans, Warwick, 1105 9th street, n. w.
 Farquhar, R. R., 202 Bates street, n. w.
 Ferguson, Charles Emory, 1648 North Capitol street.
 Fillebrown, John Potts, *M. E.*, 926 17th street, n. w.
 Fisher, Howard, *A. M.*, The Mendota.
 Fisher, Raymond Adams, 505 B street, n. e.
 Fitch, Arthur Case, *Phar. D.*, St. Elizabeth Asylum.
 Foley, Thos. Madden, The Burlington.
 Fowler, Henry Atwood, *B. S.*, The Cumberland.
 Fowler, William Chas., 1812 1st street, n. w.
 Fox, William Henry, *A. M.*, 1826 Jefferson Place.
 Foye, Amelia Frances, 1118 13th street, n. w.

- Frankland, Walter Ashby, 1300 Massachusetts avenue, n. w.
 Franklin, E. T. M., 1315 19th street, n. w.
 Franzoni, Charles William, *Ph. B.*, 605 I street, n. w.
 Fremont-Smith, Frank, *A. B.*, 1808 Massachusetts avenue, n. w.
 French, William Bates, 506 East Capitol street.
 French, William J., 1736 18th street, n. w.
 Friedrich, Leon Leigh, 329 East Capitol street.
 Fry, Henry Davidson, 1601 Connecticut avenue, n. w.
 Fry, Samuel, 1000 N street, n. w.
 Fuller, Homer G., *Ph. B.*, 1615 Florida avenue, n. w.
 Gannon, James A., 1219 Connecticut avenue, n. w.
 Gibson, Frank Eugene, 927 I street, n. w.
 Gill, William T., 442 M street, n. w.
 Glazebrook, Larkin White, 2022 P street, n. w.
 Gleeson, James Knox Polk, 1451 Harvard street, n. w.
 Graham, Neil Duncan, The New Berne.
 Graham, Neil Ferguson, 909 New York avenue, n. w.
 Grasty, Thomas Sanford Dunaway, 1231 New Hampshire avenue, n. w.
 Greene, Samuel H., Jr., 1320 Q street, n. w.
 Griffith, Monte, *Phar. D.*, The Farragut.
 Groover, Thomas Allen, The Iroquois.
 Gunion, John Paul, 927 O street, n. w.
 Gwynn, William Clarence, 3336 O street, n. w.
 Hagner, Francis Randall, 1725 N street, n. w.
 Hall, Arthur Joseph, 928 I street, n. w.
 Hamilton, Ralph A., 924 15th street, n. w.
 Hammett, Chas. Massey, The Brunswick.
 Hammond, Thos. Victor, 1713 H street, n. w.
 Hardin, Bernard Lauriston, *B. S.*, 1311 Conn. avenue, n. w.
 Harding, Harry Theodore, 2750 14th street, n. w.
 Harrington, Francis Edward, 1401 Monroe street, n. w.
 Harrison, Bernard H., 215 C street, n. w.
 Hasbrouck, Edwin Marble, 1819 Adams Mill Road.
 Heiberger, Ida Johanna, The Concord.
 Heinecke, George Burton, 5634 Brightwood avenue.
 Heitmuller, Geo. H., *A. B.*, 1604 Vermont avenue.
 Heller, Joseph M., The Farragut.
 Henderson, George, 1234 Newton street, n. e.
 Henning, Carl, The Rochambeau.
 Hickling, Daniel Percy, 1304 Rhode Island avenue, n. w.
 Hodges, John Walter, 1607 Monroe street, n. w.
 Holden, Raymond Thos., 802 6th street, s. w.
 Holland, Josiah Hutton, *Phar. D.*, The Burlington.
 Holmes, Mary, 227 1st street, n. e.
 Hooe, A. Barnes, The Iroquois, 1410 M street, n. w.
 Hough, William Hite, *Phar. D.*, St. Elizabeth Asylum.
 Howard, Joseph Theophilus, 1126 9th street, n. w.
 Howard, S. Wren, 2705 13th street, n. w.
 Hughes, William Davis, *A. M.*, 3363 18th street, n. w.
 Hume, Howard, 1235 Massachusetts avenue, n. w.
 Hummer, Harvey Reid, Caxton, S. D.
 Hunt, Arthur LeRoy, *A. B.*, The Burlington.
 Hunt, Presley Craig, 1815 M street, n. w.
 Hunter, Montgomery, 2808 N street, n. w.
 Hurtt, Harry, 1510 H street, n. w.
 Hyatt, Franck, The Rochambeau.
 Hyde, Chas. Wilbur, The Plymouth.
 Hynson, Lawrence Maxwell, 1335 N street, n. w.
 Jack, William Alexander, Jr., 1423 T street, n. w.

- Jackson, Virgil B., The Brunswick.
 Jenner, Norman Richards, 1110 Rhode Island avenue, n. w.
 Jewett, Henry Merrill, Bloomington, Ill.
 Johnson, Albert Eugene, 117 B street, s. e.
 Johnson, Henry Lowry Emilius, 1821 Jefferson Place, n. w.
 Johnson, Joseph Taber, *A. M.*, *Ph. D.*, 926 Farragut Square.
 Johnson, Loren Bascom Taber, 1211 Connecticut avenue, n. w.
 Johnson, Louis Alward, 709 C street, s. w.
 Johnson, Paul Bowen Alder, *A. B.*, The Burlington.
 Jones, Glenn I., The New Berne.
 Jung, Franz August Richard, 1229 Connecticut avenue, n. w.
 Jung, Sofie Amelie Nordhoff, 1229 Connecticut avenue, n. w.
 Junghaus, John Henry, *A. M.*, 417 D street, n. e.
 Karpeles, Simon Rufus, 1102 5th street, n. w.
 Kaufman, Harry M., The Burlington.
 Kaveney, Joseph J., The Elkton.
 Kebler, Lyman F., 1322 Park Road.
 Keech, Thomas Attaway Reeder, 416 B street, n. e.
 Keith, Emma Corey Starr, 160 Tennessee ave., n. e.
 Kelley, John Thomas, Jr., 1312 15th street, n. w.
 Kemble, Adam, *Phar. D.*, The Cecil.
 Kerr, H. H., 1711 H street, n. w.
 Kerr, James M. C., 1711 H street, n. w.
 Key, Sothoron, *M. S.*, 1716 H street, n. w.
 Keyser, Carl Schurz, 1116 New York avenue, n. w.
 Kimball, Arthur Herbert, *B. S.*, *A. M.*, The Burlington.
 King, Albert Freeman Africanus, *A. M.*, *LL. D.*,
 1315 Massachusetts avenue, n. w.
 King, Ernest Frothingham, *A. M.*, Bond Building.
 Kinyoun, Joseph J., 1423 Clifton street, n. w.
 Kober, George Martin, *LL. D.*, 1819 Q street, n. w.
 Kolipinski, Louis, *Phar. D.*, 631 I street, n. w.
 Koones, Charles Kneller, 20 Iowa Circle, n. w.
 Kramer, Thomas Best, 634 A street, s. e.
 Kurtz, John, *Ph. B.*, 3142 P street, n. w.
 Lamb, Daniel Smith, *A. M.*, 2114 18th street, n. w.
 Lamb, Isabel Haslup, 2114 18th street, n. w.
 Lamb, Robert Scott, The Cecil.
 Lawrence, Albert Lynch, *Phar. D.*, 1102 L street, n. w.
 Lawson, Huron W., 1520 9th street, n. w.
 Lee, Thomas Sim, *A. B.*, Stoneleigh Court.
 Leech, Daniel Olin, 1237 Massachusetts avenue, n. w.
 Leech, Frank, 1372 Columbia Road.
 Lehr, Louis Chas., *A. B.*, 1737 H street, n. w.
 LeMerle, Eugene Lyman, 2011 Q street, n. w.
 Lemon, Hanson Thos. Asbury, 903 M street, n. w.
 Lewis, Duff Green, *A. B.*, 1311 14th street, n. w.
 Lewis, Samuel Edwin, 1418 14th street, n. w.
 Little, Richard Mitchell, 123 11th street, s. e.
 Littlepage, Wm. Houston, The Alabama.
 Lochboehler, George John, *Phar. D.*, 55 K street, n. w.
 Logie, Benjamin Rush, St. Elizabeth Asylum.
 Loring, Frank Boott, 1420 K street, n. w.
 Lowe, Thomas P., 205 H street, n. w.
 Luce, Charles Roscoe, 215 2d street, s. e.
 Luckett, L. Fleet, 1419 Rhode Island avenue, n. w.
 Lyon, Martha M. Brewer, 48 V street, n. w.
 McArdle, Thomas Eugene, *A. M.*, 2439 Columbia Road.
 McGuire, James Clark, *A. M.*, The Rochambeau.
 Machen, Francis Stanislaus, 3114 16th street, n. w.

McCormick, John H.,	Mobile, Ala.
McKaig, Joseph F., <i>A. B.</i> ,	2420 Pennsylvania avenue, n. w.
McKay, James Geo.,	The Oakland.
McKimmie, Oscar A. M.,	The Valois.
McLaughlin, Thomas Notley,	1226 N street, n. w.
McNally, Valentine, <i>A. M., LL. D.</i> ,	Hamilton House.
McPherson, Dorsey Mahon,	1810 15th street, n. w.
Macatee, Henry Cook,	The Ashley, 18th and V streets, n. w.
Mackall, Louis,	3044 O street, n. w.
Magee, Michael D'Arcy, <i>A. M.</i> ,	1355 Corcoran street, n. w.
Magruder, Ernest Pendleton, <i>A. M.</i> ,	Emergency Hospital.
Magruder, George Lloyd, <i>A. M.</i> ,	Stoneleigh Court.
Malcolm, Wm.,	The Gloucester.
Mallan, Thomas Francis,	820 Connecticut avenue, n. w.
Malone Wilson Prestman,	1510 H street, n. w.
Marbury, Charles Clagett, <i>A. B.</i> ,	1015 16th street, n. w.
Marshall, Collins,	2507 Pennsylvania avenue, n. w.
Mason, Elijah L.,	1909 14th street, n. w.
Mason, Robert French,	The Toronto.
Mason, Wm. Beverley,	1219 Connecticut avenue.
Masterson, Wm. Lincoln,	Stoneleigh Court.
Mazzei, Francis Anthony,	2 T street, n. e.
Medford, Homer Sanford,	151 C street, n. e.
Merriam, Arthur Carlos,	1201 New Jersey avenue, n. w.
Merrill, Walter Hibbard, <i>B. L.</i> ,	1915 14th street, n. w.
Metzerott, John Hitz,	1110 F street, n. w.
Miller, Gideon Brown, <i>B. Sc., C. E.</i> ,	1730 K street, n. w.
Miller, Maurice Erwin,	1618 H street, n. w.
Miller, Thomas,	1616 7th street, n. w.
Miller, Wm. Leon,	410 K street, n. w.
Mitchell, James Farnandis, <i>A. B.</i> ,	1344 19th street, n. w.
Mitchell, Joseph Ernest,	510 13th street, n. w.
Moore, Mead,	The Rochambeau.
Moore, Seth Eastman,	1706 R street, n. w.
Moore, Wm. Cabell,	2321 18th street, n. w.
Moran, John Francis, <i>A. B.</i> ,	2426 Pennsylvania avenue, n. w.
Morgan, Edwin Lee,	2315 Pennsylvania avenue, n. w.
Morgan, Francis Patterson, <i>A. B.</i> ,	3430 Mt. Pleasant street, n. w.
Morgan, James Dudley, <i>A. B.</i> ,	919 15th street, n. w.
Morgan, Wm. Gerry, <i>A. B.</i> ,	The Rochambeau.
Morris, George Gideon,	The Laclede.
Morse, Edward Emery,	1539 I street, n. w.
Motter, Murray Galt, <i>A. M., B. S.</i> ,	1841 Summit Place.
Mulcahy, Daniel Dominick, <i>Phar. D.</i> ,	1216 North Capitol street.
Muncaster, Otho Magruder,	The Rochambeau.
Muncaster, Steuart Brown,	907 16th street, n. w.
Muncey, Elizabeth Bailey,	1337 R street, n. w.
Murphy, Joseph Alexander,	943 L street, n. w.
Murray, John Donaldson,	1030 17th street, n. w.
Murray, Thomas Morris,	2107 Massachusetts avenue, n. w.
Neff, Wallace, <i>A. M.</i> ,	1337 K street, n. w.
Nevitt, James Ramsay,	1820 Calvert street, n. w.
Newell, William Sawyer,	The Champlain.
Newgarden, George J.,	1633 Massachusetts avenue, n. w.
Newman, Henry Martel,	2403 Pennsylvania avenue, n. w.
Nichols, John Benjamin,	1321 Rhode Island avenue, n. w.
Norris, Phebe Russell, <i>B. E.</i> ,	1109 14th street, n. w.
Ober, George Clark,	210 B street, s. e.
O'Donoghue, John Alphonso, <i>A. M.</i> ,	3311 N street, n. w.
O'Malley, Mary,	St. Elizabeth Asylum.

- Owen, W. O., The Louisiana.
 Owens, Samuel Logan, 2418 Pennsylvania avenue, n. w.
 Parker, Edward M., 2028 P street, n. w.
 Parker, Henry Pickering, *A. B.*, 1518 Connecticut avenue, n. w.
 Parsons, Alfred Vandiver, Takoma Park, D. C.
 Parsons, Mary Almera, 1216 H street, n. w.
 Perkins, Wm. Robert, *Phar. D.*, 942 P street, n. w.
 Perry, George Nelson, 1316 Q street, n. w.
 Petteys, Charles Volney, 1822 12th street, n. w.
 Phillips, Wm. Fowke Ravenel, 1607 16th street, n. w.
 Pickford, Edward F., *A. B.*, 422 8th street, s. e.
 Pile, Mayne, Marshall, 1929 S street, n. w.
 Polkinhorn, Henry Alexander, 1201 M street, n. w.
 Pool, Benjamin George, 945 Rhode Island avenue, n. w.
 Portman, Adeline Elwell, *A. M.*, Bond Building.
 Prentiss, Daniel Webster, *B. S.*, 1315 M street, n. w.
 Ramsburgh, Jesse Houck, *A. M.*, The Portner.
 Randolph, Buchner Magill, The Toronto.
 Ray, Anthony Moreland, Tenleytown, D. C.
 Reeve, Jesse Newman, 926 Farragut Square.
 Reeves, William Pinckney, The Congressional, 100 East Capitol street.
 Reichelderfer, Luther Halsey, The Burlington.
 Reisenger, Emory Wm., The Champlain.
 Repetti, Frederick Francis, 149 B street, s. e.
 Repetti, John Joseph, The Seward.
 Reville, Laura Marie, 1017 14th street, n. w.
 Rhett, Henry Johns, *A. B.*, 1307 Connecticut avenue, n. w.
 Richards, Alfred, The Seward.
 Richardson, Charles Williamson, 1317 Connecticut avenue, n. w.
 Richardson, Edward Elliott, *M. S.*, 404 7th street, s. w.
 Richardson, J. Julius, 1016 14th street, n. w.
 Richey, Sephen Olin, 732 17th street, n. w.
 Riggles, John Lewis, The Champlain.
 Robbins, Henry Alfred, 1750 M street, n. w.
 Robins, William Littleton, The Rochambeau.
 Rogers, Joseph Decatur, 721 8th street, n. w.
 Roman, Frederick Ogle, 1435 9th street, n. w.
 Roy, Philip Seddon, 1200 Massachusetts avenue, n. w.
 Ruedy, Robert Conrad, 625 Maryland avenue, n. e.
 Ruffin, George Mendenhall, 1101 14th street, n. w.
 Ruffin, Sterling, 1335 Connecticut avenue, n. w.
 Savage, Linnaeus Samuel, Bennings, D. C.
 Sawtelle, Henry Fenno, 3001 11th street, n. w.
 Schneider, Edwin C., 1724 21st street, n. w.
 Schneider, Francis Alphonse, The Savoy.
 Scott, James Foster, *A. B.*, The Albemarle.
 Seibert, Edward Grant, *Phar. G.*, 916 14th street, n. w.
 Sellhausen, Ernest August, 640 G street, n. w.
 Shands, Aurelius Rives, 901 16th street, n. w.
 Shaw, John Watson, 1453 Rhode Island avenue, n. w.
 Shoup, Jesse, The Roland.
 Shute, Daniel Kerfoot, *A. B.*, 1719 De Sales street, n. w.
 Simpson, John Crayke, 1421 Massachusetts avenue, n. w.
 Smith Dwight Gordon, *A. B.*, 3121 14th street, n. w.
 Smith, Thomas Croggon, 1133 12th street, n. w.
 Snowden, Edgar, The Tennessee.
 Snyder, Arthur Augustine, 3051 N street, n. w.
 Sohon, Frederiek, 512 I street, n. w.
 Sothoron, Elmer Hezekiah, *B. E.*, 1921 I street, n. w.

- Sowers, Wm. P. M., 1707 Massachusetts avenue, n. w.
 Sowers, Zachariah Turner, *A. M.*, *Ph. B.*,
 1707 Massachusetts avenue, n. w.
- Sprigg, William Mercer, The Rochambeau.
 Squire, Susan Johnson, 1736 North Capitol street.
 St. Clair, Francis Alphonso, *Phar. D.*, 1319 T street, n. w.
 Staples, Aubrey Horatio, 1739 S street, n. w.
 Stavely, Albert Livingston, *A. M.*, 1744 M street, n. w.
 Steltz, Peter Henry, Jr., 611 North Carolina avenue.
 Stone, Charles Granville, Brightwood, D. C.
 Stone, Isaac Scott, Stoneleigh Court.
 Stoutenburg, John Albertson, 116 2d street, s. e.
 Street, Daniel Baen, 1000 9th street, n. w.
 Strickler, Melchior B., 815 M street, n. w.
 Strobel, Mary Louise, 16 R street, n. w.
 Stromberger, Henry Halliday, 1810 9th street, n. w.
 Stuart, Albert Rhett, *A. M.*, 7 Dupont Circle.
 Stuart, James, *A. B.*, 1315 12th street, n. w.
 Suddarth, James Littleton, 817 North Capitol street.
 Sullivan, T. J., 512 6th street, s. w.
 Suter, Henderson, 3026 N street, n. w.
 Suter, Wm. Norwood, *A. B.*, 911 16th street, n. w.
 Sutherin, John W., 1013 M street, n. w.
 Syme, Wm. H., 3009 P street, n. w.
 Talbott, John Allan, 908 15th street, n. w.
 Tappan, Joseph Clarence, 11 R street, n. e.
 Tayler-Jones, Louise, *M. S.*, The Woodley, Columbia Road.
 Taylor, Lewis Harvie, The Cecil.
 Taylor, Thomas, 238 Massachusetts avenue, n. e.
 Thomas, Ada Rebecca, The Thomas.
 Thomas, John Daniel, *A. B.*, 1603 19th street, n. w.
 Thompson, Edgar Dorman, *A. M.*, 1247 North Capitol street.
 Thompson, Joseph Ford, Cosmos Club.
 Thompson, J. Lawn, 1414 Q street, n. w.
 Thompson, Millard Fillmore, *D. D. S.*,
 484 Maryland avenue, s. w.
- Thönssen, Wm. Julius Reichman, 315 C street, s. e.
 Tobias, Henry Wood, *B. E.*, 1424 Q street, n. w.
 Toner, John Edmund, *Phar. D.*, 214 14th street, n. e.
 Trimble, Robert S., 722 18th street, n. w.
 Tubman, James Richard, 1222 11th street, n. w.
- Tucker, Wm. Peyton, The Kenesaw.
 Vale, Frank Palmer, The Toronto.
 Van Rensselaer, John, *A. M.*, The Rochambeau.
 Vaughan, George Tully, 1718 I street, n. w.
 Vincent, Thomas Norris, *A. M.*, 1221 N street, n. w.
 Wagner, Wm. F., *Phar. G.*, 501 L street, n. w.
 Walker, Reginald Redford, 1710 H street, n. w.
 Wall, Joseph Stiles, 1232 14th street, n. w.
 Walsh, F. C., Canana, Sonora, Mexico.
 Walsh, John Edgar, 202 East Capitol street.
 Walsh, Ralph, The Albany.
 Walter, William Francis, *A. M.*, 487 H street, s. w.
 Warren, George Walter, 1212 H street, n. e.
 Waters, Charles L., Madison, near Brightwood avenue.
 Watkins, Edgar Wm., 2820 14th street, n. w.
 Watkins, Samuel Evans, The Alabama.
 Weaver, Clarence Arlington, 1614 Q street, n. w.
 Wellington, John Ryder, *A. M.*, 1706 R. I. avenue, n. w.
 Wells, Walter Augustine, The Rochambeau.

Werber, Gustavus, <i>A. M.</i> ,	1353 Q street, n. w.
White, Charles Stanley,	The Farragut.
Whitson, Wm. E.,	929 M street, n. w.
Wilkinson, Oscar,	1404 L street, n. w.
Wilkinson, Walter Watkins,	The Burlington.
Willson, Prentiss,	2024 O street, n. w.
Wilmer, William Holland,	1610 I street, n. w.
Winter, Eugene Chas. Curtis, <i>Phar. D.</i> ,	815 4½ street, s. w.
Wood, George Wm.,	2906 P street, n. w.
Woodward, Wm. Creighton, <i>LL. M.</i> ,	508 I street, n. w.
Wright, Hamilton K.,	1631 Massachusetts avenue, n. w.
Yarnall, John Hepburn,	3028 P street, n. w.
Yarrow, Henry Crecy,	814 17th street, n. w.
Yates, Frederick, <i>LL. M.</i> ,	1230 9th street, n. w.
Young, Wm. Glenn,	1315 N street, n. w.

HONORARY MEMBERS.

- 1895--Ashby, Thomas A., 1125 Madison avenue, Baltimore, Md.
 1875—Billings, John S., Surgeon, U. S. A., retired,
 40 LaFayette Place, New York City.
 1896—Fletcher, Robert,
 Army Medical Library, Washington, D. C.
 1900—Jacobi, Abraham, 19 East 47th street, New York City.
 1905—Keen, W. W., 1719 Chestnut street, Philadelphia, Pa.
 1905—Musser, W. H., 1927 Chestnut street, Philadelphia, Pa.
 1895—Osler, William, Oxford, England.
 1895—Palmer, W. H., Providence, R. I.
 1895—Shattuck, Frederick C.,
 135 Marlboro street, Boston, Mass.
 1895—Sternberg, George M., Surgeon-General, U. S. A., retired.
 2005 Massachusetts avenue, n. w., Washington, D. C.
 1895—Wyman, Walter,
 Supervising Surgeon-General, U. S. P. H. and M. H. S.

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" B. K. Ashford,	Washington Barracks.
" H. H. Bailly,	Ft. Myer, Va.
" Wm. D. Crosby,	Soldiers' Home, D. C.
" Carl R. Darnall,	1717 Riggs Place.
" M. A. Delaney,	The Buckingham.
" Guy L. Edie,	Army Dispensary.
" W. H. Forwood,	1425 Euclid Place.
" Valery Havard,	War Department.
" J. B. Herrick,	Soldiers' Home, D. C.
" D. C. Howard,	1735 New Hampshire avenue, n. w.
" J. B. Huggins,	Washington Barracks.
" M. W. Ireland,	War Department.
" Jefferson R. Kean,	War Department.
" E. A. Koerper,	2234 Q street, n. w.
" Chas. Lynch,	Ft. Myer, Va.
" Walter D. McCaw,	Army Medical Library.
" Chas. F. Mason,	War Department.
" R. M. O'Reilly, Surgeon-General,	War Department.
" H. F. Pipes,	Washington Barracks.
" F. L. Pleadwell,	The Marlboro.
" Wm. Roberts,	The Farragut.

Dr. F. F. Russell,	Army Medical Museum.
" J. O. Skinner,	Columbia Hospital.
" P. F. Straub,	War Department.
" Walter D. Webb,	Washington Barracks.
" F. A. Winter,	Ft. Myer, Va.

U. S. Navy.

Dr. T. A. Berryhill,	Navy Department.
" H. G. Beyer,	1725 H street, n. w.
" J. C. Boyd,	Naval Museum Hygiene.
" W. C. Braisted,	Navy Department.
" Ernest W. Brown,	1310 Girard street.
" Dwight Dickinson,	1806 R street, n. w.
" Wm. S. Dickson,	Naval Dispensary.
" J. M. Flint,	Stoneleigh Court.
" J. D. Gatewood,	Navy Department.
" A. A. Hoehling,	1748 Q street, n. w.
" P. A. Lovering,	Navy Department.
" P. M. Rixey, Surgeon-General,	Navy Department.
" W. K. Van Reypen,	1021 15th street, n. w.
" J. C. Wise,	Navy Department.

U. S. Public Health and Marine Hospital Service.

Dr. J. F. Anderson,	1414 Binney street.
" H. D. Geddings,	The Westmoreland.
" A. H. Glennan,	Chevy Chase, Md.
" W. J. Pettus,	Marine Hospital Bureau.
" M. J. Ro-enau,	3211 13th street, n. w.
" John Trask,	Marine Hospital Bureau.

Miscellaneous.

Dr. Nicholas Achucarro,	St. Elizabeth Asylum.
" Dr. Frank Baker,	1728 Columbia Road.
" I. W. Blackburn,	St. Elizabeth Asylum.
" P. S. B. Cisco,	1 Iowa Circle.
" W. M. Gray,	Army Medical Museum.
Mr. G. H. Grosvenor,	Hubbard Memorial Hall.
Dr. E. R. Hodge,	Army Medical Museum.
" A. Hrdlicka,	U. S. National Museum.
" Reid Hunt,	1335 15th street, n. w.
" J. A. LeClerc,	Department of Agriculture.
" H. Smith,	U. S. Bureau of Fisheries.
" L. Stejneger,	Smithsonian Institution.
" C. W. Stiles,	Hygienic Laboratory.
" G. W. Stiles,	4820 Iowa avenue.
" W. A. White,	St. Elizabeth Asylum.
" C. L. Wilbur,	1374 Harvard street.
" H. W. Wiley,	Department of Agriculture.

WASHINGTON MEDICAL ANNALS

REVIEW OF HYGIENE AND SANITARY SCIENCE.*

By GEORGE M. KOBER, M. D., LL. D.,

Washington, D. C.

During the last year or two much has been written on the subject of vaccination against typhoid fever, cholera and pest. Dr. Sterling Ruffin, in his admirable review of Internal Medicine, January 27, 1909, discussed in a most thorough manner the character of the infection of typhoid fever, its contagiousness, the chronic bacillus excretors and the prevention of typhoid fever by vaccination, matters of the utmost importance to public health. The apparent protective influences of vaccination against typhoid fever are shown by the fact that among 7,000 soldiers inoculated the incidence and mortality are as 1 to 10 as compared with the incidence and mortality among those not inoculated.

Strong, of Manila, after finding that vaccination with dead pest bacilli or with bacillary extracts gave practically no immunity in the lower animals, employed a living non-virulent culture, and in a small epidemic the death rate among the inoculated was 66.6 per cent., while among the vaccinated it was only 16.6 per cent.; but the number so far of the vaccinated exposed in this epidemic was too small to justify positive conclusions.

Strong also inoculates against cholera by injecting 1 cc. of the extract from virulent bacteria, made according to the methods of Brieger and Neisser and of Shiga and Wasserman. He has so far treated over 6,000 persons by this method, and concludes that from a single inoculation a higher immunity can be obtained by this prophylactic than by any other (Vaughan).

* Read before the Medical Society, April 14, 1909.

One of the most practical papers which have come under my observation was read before the Association of American Physicians, last May, by Dr. David L. Edsall, of Philadelphia, on the "Hygiene of Medical Cases," particularly in hospital wards. In this paper the author very properly arraigns the present system in dealing with infectious diseases in medical wards, and points out very clearly that many of the contact infections in typhoid fever, tuberculosis, pneumonia, influenza, etc., might be avoided if proper precautions were taken. While his comments are specially applicable to ward cases, they are nevertheless true of patients treated at their homes. Those who have witnessed the frequent typhoid infections in nurses and internes will appreciate that while their age renders them peculiarly predisposed, in the majority of cases carelessness, food and digital infection are really responsible for the attack. He also adduces considerable evidence to show how careless nurses may infect patients while attending to their mouths with infected fingers and utensils. Apart from this, it is perfectly conceivable that flies which have passed over typhoid dejecta, soiled buttocks or bed clothing may convey the germs to the food or drink of the inmates unless proper precautions are taken. This mode of transmission, first pointed out by the writer in 1895, is now very generally accepted, and there is much reason for assuming that flies also play an important rôle in the transmission of other diseases.

Dr. Edsall's observation leads him to believe that special causes of abdominal symptoms may be passed from case to case in typhoid fever; so, for example, in all the instances of diarrhea mentioned by him the nurses who had the care of the patients that came in with diarrhea also had to do with patients that subsequently developed diarrhea. The incidents actually observed by him sufficed to make him feel "that most probably secondary infections of the intestinal tract give rise to diarrhea and even outbreaks of hemorrhages and perforation were being transmitted through the care of the patients' mouths by the nurses."

He also refers to the frequency of transmission of otitis media in diphtheria, and some of the acute exanthemata in children through the buccal cavity, and cites the fact that in 1902 he had seven cases of otitis media in adult typhoid cases in the course of two weeks, and in 1906 Dr. Stevens had among his cases a rapid succession of this complication, and considers it highly probable

that the infection was transmitted by the nurses from case to case by the care of the mouth. In 1903 he reported an experience in which a peculiar vesiculopustular skin infection caused by a staphylococcus was transmitted to five cases of typhoid in the same ward.

On account of the situation he suspected that it was carried by the bedpans or inoculated by the nurses in rubbing the patients, and with the necessary precautions this complication did not develop further in his ward, though the infection still seemed to be about the hospital, for it appeared later in another part of the house. He relates similar observations concerning the transmission of furunculosis, bullae, impetigo contagiosa, and makes a strong plea for medical asepsis.

His precautionary measures in cases of pneumonia, tonsillitis, influenzal attacks and tuberculosis, with special reference to isolation, care of the mouth, collection and disposal of the sputum, care and disinfection of eating and drinking utensils, thermometers, tongue depressors, are of extreme practical importance. Speaking of tuberculous patients, while he considers it theoretically practicable to treat such patients in a general ward with entire safety to other patients, provided that the tuberculous patients intelligently and conscientiously follow orders, yet on account of the uncertainty of their doing so he advocates isolation; for like reasons he would isolate cases of tonsillitis and pneumonia, and insists that pneumonic cases should under no circumstances be placed close to typhoid fever patients or those suffering from a very depressing disease. He describes a small ward epidemic caused by a pneumonia patient who, being delirious and spitting in all directions, infected the surrounding area of the ward. His faith in medical asepsis and partial or complete isolation has been materially strengthened because since the introduction of his precautionary measures he has seen no evidence of the transmission of pneumonia infections except in one case—in which a patient with an unrecognized pneumonia had in his absence been placed for two days among the typhoid cases—and yet within these same years in the same wards two of his colleagues who continued to mix their pneumonia with typhoid cases had a rapid series of cases of lobar pneumonia in their typhoid cases. He has had no ward skin infections, no typhoid infections and no evidence of the transmission of severe diarrhea, hemorrhage and

perforations in typhoid fever cases; indeed, in 1907, in a total of 116 cases he had only one severe case and two very mild cases of hemorrhage and two perforations, one of the latter occurring in a convalescent. We quite agree with Dr. Edsall that while chance may have played a rôle, the system employed should be fairly credited with at least part of the results.

The study of milk in relation to public health has received considerable attention in the last year, the most notable contribution being Bulletin 41, of the Public Health and Marine Hospital Service, a work of the utmost value, and covering 751 pages of solid reading matter. The book contains an introduction by General Wyman, followed by Dr. Trask's tabulation of 500 milk-borne epidemics of typhoid fever, scarlet fever and diphtheria, and deals, therefore, with 170 additional epidemics since the appearance of the writer's monograph, published as Senate Document 441, in 1900. Chapter 3 treats of the milk supply of cities in relation to the epidemiology of typhoid fever, by Dr. Lumsden, followed by a chapter prepared by Dr. Anderson on the frequency of tubercle bacilli in the market milk of the City of Washington. From his experiments we learn that in approximately 11 per cent. of the 102 dairies which furnished the 223 samples the milk contained tubercle bacilli virulent for guinea pigs; these results, in Dr. Anderson's judgment, do not give a fair "idea of the frequency of the presence of tubercle bacilli in the market milk of this city, but are sufficiently high to emphasize the great necessity for the enactment and rigorous enforcement of a law requiring that all cows supplying milk to the District of Columbia be tuberculin tested and be free from tuberculosis." In this connection the question naturally arises, What danger, if any, is there from the transmission of bovine tuberculosis to man? Professor Koch's views on this subject may be summarized as follows: 1. The tubercle bacilli of bovine tuberculosis are different from those of human tuberculosis. 2. Human beings may be infected by bovine tubercle bacilli, but serious diseases from this cause occur very rarely. 3. Preventive measures against tuberculosis should, therefore, be directed primarily against the propagation of human tubercle bacilli.

His opponents, on the other hand, believe that the danger from the transmission of bovine tuberculosis is considerable, that the meat, milk, cream, butter, ice cream, may contain tubercle bacilli

if the product is derived from an infected cow, and that infection by the intestinal route may not only produce tuberculosis of the bowels, peritoneum and lymphatic glands, but also of the lungs.

There is more or less experimental and clinical evidence to indicate the possibility of the transmission of bovine tuberculosis to man. Calmette, Guerin, De Schweinitz, Schroeder, Eber, Rabinowitsch, Vallee and a host of others believe that the bovine variety does cause tuberculous lesions in man. The writer has tabulated eighty-six cases of milk-borne tuberculosis, three accidental inoculations in man by the topical application of cream and milk, and twelve tuberculous wound infections in veterinarians and butchers, but much remains to be done to determine the real degree of danger from this source; in the meantime, we heartily commend the conservative spirit which finally prevailed at the last International Congress for Tuberculosis.

Reverting to Bulletin 41, we find in Chapter 5, prepared by Dr. Anderson, considerable evidence to show that Malta fever is conveyed by the means of the milk of goats infected with the specific organism of the disease. While other means are not excluded it appears highly probable that in Malta, infected goats' milk is by far the most important factor. The animals themselves become infected through the food, and the specific organism appears generally in the milk and to a less extent also in the urine of the animal.

Dr. McCoy contributes an exhaustive article on milksickness due to the ingestion of milk, milk products or the flesh of animals (usually cattle) suffering from a disease known as "trembles." The disease in man is characterized by a great depression, persistent vomiting, obstinate constipation and high mortality. Although the disease was first described by Drake as early as 1809, and has prevailed in nearly all of the newly settled regions south of New York and as far west as Missouri and Arkansas, the real cause is still obscure. Dr. Stiles contributes a chapter on the relation of cow's milk to the zoo-parasitic diseases of man; he believes it "theoretically possible that certain infections with animal parasites may be contracted through the milk supply, but the danger from this source is in general more theoretical than real and can be prevented by the most elementary methods of cleanliness." The chapter, although brief, is replete with valuable information and shows very conclusively that there is danger from filthy habits and neglect in handling our milk supply.

Dr. Eager's chapter on morbidity and mortality statistics as influenced by milk, with special reference to infantile mortality, is a very important contribution to our knowledge of the subject. He shows that the percentage of deaths among the infants in the care of the City of New York at Randall's Island was reduced by the installation of a pasteurizing plant from 41.81 for the period ending 1897, to 21.75 for the seven-year period ending 1904, and quotes the statistics of Raudnitz, which indicate that one-fourth of the typhoid epidemics in Austria are milkborne, while in McRae's inquiry into the causes of 638 epidemics of typhoid fever, the infection was conveyed by milk in 17 per cent. of the outbreaks.

In a recent examination of the literature of the subject on the relation of impure milk to infantile mortality I find that three-fourths of the 150,000 infantile deaths in Great Britain occurred in bottle-fed children. Indeed, we have evidence that of the 54,047 infantile deaths which have been investigated at home and abroad, with reference to feeding, 86.6 per cent. had been artificially fed, all of which points to the fact that the quality of the food, chiefly cow's milk, in hand-fed children, plays the most important rôle. This assumption finds, moreover, support by the fact that the infantile death rate and diarrheal diseases in children under five years of age have materially decreased in a number of American cities since the enactment of pure-milk laws, notably in Buffalo, Rochester, Chicago, New York and Washington. According to Dr. Woodward's report for 1905, the death rate from diarrhea and inflammation of the bowels among children under two years of age during the five-year period ending 1894, was 175 per 100,000. During the next ten years it dropped to 109, and in 1906 it was only 97. Dr. Woodward says "the only explanation for the fall in the death rate from infantile diarrhea that I have been able to discover is the enactment on March 2, 1895, of the law regulating the sale of milk in the District of Columbia, and the establishment of dairy and dairy-farm inspection under the provision of that law."

The chapters on ice cream, by Dr. Wiley, and the chemistry of milk, by Dr. Joseph H. Castle and Norman Roberts, are the most complete chapters ever written on the subject. The same may be said of Dr. Rosenau's chapter on the number of bacteria in milk and the value of bacterial counts. He tells us that the

general milk supply of Washington averaged 22,134,000 bacteria per ccm. in the summer of 1906 and 11,270,000 in the summer of 1907, but very properly points out that "the character of the organisms rather than the number, is of significance, except that milk containing excessive numbers of bacteria is by universal consent considered unfit for infant feeding." He refers to the various sources of the initial bacterial contamination, such as unclean methods in milking, and that with ordinary care the number could be vastly diminished. The legal standard for Boston is given at 500,000; Rochester, 100,000, and Park is quoted as stating, "that any intelligent farmer can use sufficient cleanliness and apply sufficient cold with almost no increase in expense to supply milk twenty-four to thirty-six hours old which will not contain in the maximum over 50,000 to 100,000 bacteria per cc., and that no milk containing more bacteria than this should be used." Dr. Rosenau, in speaking of the advantages of systematic bacteriological investigation, points out that apart from the fact that they afford an excellent opportunity to determine the degree of care and watchfulness observed at the dairy, whether the milk is dirty, old or warm, we are also enabled to exclude the milk of diseased cows, especially those suffering from inflammatory conditions of the udder and teats—conditions which will be revealed by an abnormal number of streptococci. This subject is further discussed in Chapter 13, on the significance of leucocytes and streptococci in milk, by Dr. Miller. While it has been shown that even normal milk always contains leucocytes and usually streptococci, it is perfectly safe to say that an excessive number signifies that it is the product of a diseased udder and teat, and the writer has held since 1895 that their presence in large quantities may produce staphylococci and streptococci infections, often difficult to differentiate clinically from diphtheria and scarlet fever. So far we have no method to distinguish the pathogenic from the nonpathogenic streptococci in milk, hence the best thing to do is to exclude the milk of every animal suffering from inflammatory affections of the udder and teats, as these organisms are, without a doubt, a source of danger to infants and young children.

Dr. Rosenau's chapter on the germicidal property of milk is of interest and importance, as his conclusions are based upon more or less extended laboratory work. His views on this subject are

as follows: "The germicidal action of milk varies in different animals and in the milk from the same animal at different times. At most the action is variable and feeble * * *. Although the germicidal property of fresh milk is feeble it must be of value to the suckling. This self-evident fact emphasizes the importance of using fresh milk for artificial feeding."

The chapter on pasteurization, by Rosenau, is a splendid contribution to our knowledge of the subject; he sets forth the advantages and disadvantages, and very properly declares "Theoretically, pasteurization should not be necessary; practically we find it forced upon us. The heating of milk has certain disadvantages which must be given consideration, but it effectually prevents much disease and death, especially in infants during the summer months." We note with gratification "that there is no evidence to show that low-temperature pasteurization, such as is now recommended, ever in itself induces scurvy." The writer has urged for years pasteurization at a temperature of 150 degrees F. for twenty minutes as a lesser evil; indeed, he believes that the dangers have been exaggerated, and the question of incomplete absorption of the salts as a cause of scurvy and rickets has not been sufficiently considered. These diseases are most frequently developed in children after prolonged diarrheal affections; the child is placed on pasteurized milk for the relief of the diarrhea, and if scurvy or rickets develop the blame falls upon pasteurization, when it should be justly laid to the incomplete absorption of the salts incident to diarrheal diseases. In the light of our present knowledge concerning milk-borne diseases, like typhoid fever, scarlet fever, diphtheria, dysentery, tuberculosis, and especially in view of the existence of typhoid bacillus carriers, we know of no means by which the transmission of these diseases can be prevented except by general pasteurization.

Dr. Mohler's chapter on the conditions and diseases of the cow injuriously affecting the milk, deals with bovine tuberculosis, actinomycosis, botryomycosis, foot and mouth disease, anthrax, cowpox, mammitis, gastro-enteritis, septic or febrile conditions and other abnormal conditions. Mr. Webster's chapter on dairy sanitation is a most intelligent contribution as to what may be accomplished with reasonable sanitary precaution in the production of pure market milk.

Dr. Meade Bolton's chapters on water supplies for dairy farms

are of importance when we consider that many of the disease germs gain access to milk by the washing of the utensils with infected water, or even the intentional dilution of milk with such unsuspected water. Dr. Melvin's classification of market milk, if adopted everywhere, would exclude all milk which may be harmful to the consumer and would provide wholesome and nutritious milk. Under Class 1 he proposes a reasonable standard for certified milk especially intended for infant feeding; such milk is derived from healthy animals under special sanitary precautions, free from disease germs, not over twelve hours old and with a bacterial contents not exceeding 10,000 per ccm. Class 2 includes milk of a similar character, but the bacterial contents may reach as high as 100,000 per ccm. Class 3 includes the milk from such dairies as are not able to comply with the rigid requirements specified under Classes 1 and 2, and should therefore be subjected to pasteurization before being sold. Cows suffering from communicable diseases are excluded from the dairy herd even in this class, an exception being made in the case of animals which may have reacted to the tuberculin test but are yet free from any physical signs of tuberculosis.

The chapter on certified milk and infants' milk depots and infant feeding by Drs. Kerr and Schereschewsky contains information of the utmost value to all interested in the prevention of "the slaughter of the innocents," and cannot fail to be of practical value to the clinician by the application of the general principles here enunciated.

This valuable book concludes with an excellent chapter by Dr. Woodward on the municipal regulation of the milk supply of the District of Columbia. This monograph, which doubtless will be carefully revised for a second edition, is by far the most important contribution in the interest of public health which has appeared in this country, and it is gratifying to note that it owes its inception to the untiring efforts of Dr. G. Lloyd Magruder, who interested the President, and through him the Secretary of the Treasury "directed that the United States Public Health and Marine Hospital Service invite the coöperation of the Bureau of Animal Industry and Chemistry of the Department of Agriculture in an investigation of the milk industry of the District of Columbia from the farm to the consumer in its relation to the public health."

In this connection attention is called to the very excellent monograph on maternity published by Dr. Henry D. Fry in 1907, a work which can be confidently recommended to all interested in the prevention of infant mortality.

We have given much space to the subject of milk, because it has been estimated by Professor Irving Fisher, of Yale, that at least eight years could be added to human life merely by securing reasonably pure air, water and milk.

[Dr. Kober pointed out that according to Professor Finkelnburg, of Bonn, the average length of life in the sixteenth century was only between 18 and 20 years, while today it is between 40 and 50 years. No two factors have contributed so much to the general results as the improvement of the air we breathe and the water we drink. Indeed we have ample evidence that with the introduction of public water supplies and sewers the general mortality in numerous cities during the past fifty years has been reduced fully one-half, the good effects being especially shown by a marked decrease in the number of deaths from typhoid fever, diarrheal diseases and consumption.

For the purpose of illustrating the influence of water supplies on the typhoid fever death rates Dr. Kober presented charts based upon data furnished by Mr. M. O. Leighton, of the U. S. Geological Survey, and Dr. Cressy L. Wilbur, of the Bureau of the Census, a summary of which is as follows :

Mean typhoid fever death rate from 1902 to 1906 per 100,000 of population :

4 cities using protected ground water from large wells,	18.1
18 cities using protected streams,	18.5
8 cities using water from protected small lakes,	19.3
7 cities using water from the Great Lakes not protected,	32.8
5 cities using both surface and underground water,	45.7
19 cities using polluted river water,	61.1

Dr. Kober presented a chart showing the general movement of typhoid fever in fourteen countries and cities since 1881, indicating that the death rate from this disease has fallen from an average of 42.3 to 18.1 per 100,000, a reduction of 54.3 per cent.

Dr. Kober also presented a chart prepared by Dr. Wilbur showing the effect of change in water supply in seven American cities, viz: Lawrence, Lowell, Newark, Jersey City, Paterson,

Albany and Binghamton. From this chart we learn that the combined average annual death rate from typhoid fever fell after the substitution of a pure supply from 69.4 to 19.8 per 100,000, a reduction of 70.5 per cent. Dr. Kober quoted statistics published in the Bulletin of the New York State Department of Health, April, 1908, showing that the death rate from typhoid fever in ten cities of that State has been reduced 53.4 per cent. by improved water supplies.]

It may be urged [he said] that improved methods of medical treatment are responsible for a considerable reduction in the death rates from typhoid fever, but when we see such a striking change immediately after the installation of filtration plants as in the case of the American cities shown we are forced to the conclusion that water purification plays the most important rôle by diminishing primarily the number of cases.

It should be stated, however, that the effects are still more marked when combined with a good sewerage system. The history of every sewered town shows a lessening of the typhoid death rate subsequent to the construction of the sewers, and that the typhoid rate is always higher in sections supplied with makeshifts. In 1895 the writer pointed out that typhoid prevailed in Washington in 1 of 81 houses with privies and in only 1 in 149 of those connected with sewers. The health officer of Nottingham, England, has since then presented similar evidence. The only reasonable explanation for this is that sewers carry away the filth that otherwise would contaminate the soil and ground water, but even if there were no wells, these makeshifts are still a source of danger in so far as they favor the transmission of the infection by means of flies, nor can the possibility be ignored that the germs in leaky or overflowing boxes may reach the upper layer of the soil and, with pulverized dust, gain access to the system.

[Dr. Kober pointed out that Mr. Allen Hazen has conclusively shown that where one death from typhoid fever has been avoided by the use of a better water, a certain number of deaths, probably two or three, from other causes have been avoided. It is a difficult matter to explain how water is connected with the deaths other than those from water-borne diseases, yet when we consider that water enters into the composition of the human body to the extent of 60 per cent., we are in a position to appreciate the san-

itary acumen of Aristotle when he wrote in his "Politica": "The greatest influence on health is exerted by those things which we most freely and frequently require for our existence, and this is especially true of water and air."

Dr. Kober presented charts showing the movement of tuberculosis in the last fifty years in England and Massachusetts and the general movement in the United States and in the cities of New York, Baltimore and Washington since 1880. He pointed out that the following reductions in the death rate from tuberculosis per 100,000 of population have taken place:

	Reduction, per cent.
England and Wales, from 348.7 in 1850 to 172.2 in 1906,	50.6
Massachusetts, . . . 469.2 in 1850 to 218.3 in 1906,	53.6
United States, . . . 326.2 in 1880 to 183.6 in 1907,	49.5
New York, . . . 355.6 in 1880 to 271.0 in 1907,	37.5
Washington, . . . 440.0 in 1880 to 210.0 in 1907,	37.3
Baltimore, . . . 349.7 in 1880 to 263.2 in 1907,	24.7

He also presented evidence to indicate that the introduction of sewers and general sanitation appears to have influenced to a great extent the gratifying decrease of this disease.]

A most excellent contribution has recently been made by Dr. L. O. Howard, on the economic loss to the people of the United States through insects that carry disease, Bulletin 78, U. S. Department of Agriculture, March 18, 1909. In this monograph Dr. Howard considers the mosquito as the carrier of malaria, and estimates that there are probably not less than 3,000,000 cases of malaria annually, and upon a basis that one-fourth of the productive capacity of the patients is lost, places "the annual loss to the United States from this disease at not less than one hundred million of dollars." He points out that malaria is a preventable disease and what may be accomplished by proper screening of the habitations and the more rational and permanent measures looking to the reclamation of swamps and the destruction of the breeding places of the malarial mosquitoes. The efficacy of screening has been abundantly demonstrated; the most striking experiment with which the writer is familiar was made by the Japanese Government with two battalions of soldiers stationed in Formosa. One was completely protected from mosquitoes for 161 days during the malarial season, without a single case; in

the other battalion not so protected 259 cases occurred. Dr. Howard refers to the achievements in the Federated Malay States, at the Suez Canal, Havana, Panama, New Orleans and elsewhere, not only in the prevention of malarial but also of yellow fever by a ceaseless war upon the mosquitoes. The results of sanitation, which have saved thousands of lives and millions of dollars, are too well known to require further elaboration. It is especially gratifying that the labors of Reed, Carroll, Lazear and Agramento have demonstrated that the *stegomyia calopus* is the chief carrier of yellow fever, and in preventive efforts the exclusion and destruction of the insect is of paramount importance. Dr. Howard gives much consideration to the rôle which the house fly plays in the dissemination of typhoid fever, and proposes the name "typhoid fly" as a substitute for the more familiar term, "with a view of possibly emphasizing the danger of this insect in the transmission of the disease. In order to stamp out the breeding places he makes a strong plea for proper regulation of abattoirs and stables, all manure to be placed daily in covered receptacles to prevent the ingress and egress of flies, and its weekly removal, together with prompt collection and careful disposal of garbage and general cleanliness. In like manner we should urge the abandonment of open privies and surface pollution, substitution of the dry-earth closet or other rational methods for the collection and disposal of excreta in communities not yet supplied with a well-planned system of sewerage. Until the breeding places are destroyed all habitations should be properly screened, for we can no longer doubt that the fly is a potent factor in carrying disease germs from infected sources to the food supply; while this is especially true of typhoid fever, cholera, dysentery, diarrhea and other intestinal infections, there is much reason for assuming that it also plays a rôle in the dissemination of tuberculosis, oriental pest, purulent affections of the eye and in wound infections.

In view of the recent anti-vaccination movement both in England and this country, it may be well to state that according to General Wyman, of the Public Health and Marine Hospital Service, there were during the last eight years 242,847 cases of smallpox with 6,067 deaths in the United States. Every death from smallpox is a reflection upon the intelligence of the age. This disease is entirely preventable by vaccination and proper re-vaccination.

The statistics of England show that in the last half of the eighteenth century nearly one-tenth of all the cases of death perished from smallpox and another one-tenth was disfigured.

On the 14th of May, 1796, Edward Jenner introduced vaccination. During the period of optional vaccination the death rate fell from 200 to 41.7 per 100,000, and from 1850 to 1898, during a period of compulsory vaccination it fell to 5.3. In August, 1898, the "conscientiously believes" clause was enacted in deference to the anti-vaccinationists; 230,147 persons were exempted by the operation of the law, and in 1902 the rate rose in the United Kingdom to 6.1 and in Scotland to 7.5 per 100,000. The statistics of Prussia show that with the enactment of the revaccination law in 1874 the mortality has fallen to less than .1 per 100,000, while the rate in the registration area in the United States is just thirty-four times greater. Indeed it is claimed that Prussia would be entirely free from the disease if it were not for the importation from Russia and Austria.

President Thomas Jefferson was instrumental in introducing vaccination in 1801 in this city and the South, and in 1806, according to Professor Harrington, wrote the following letter to Dr. Jenner: "You have erased from the calendar of human afflictions one of its greatest. Yours is the comfortable reflection that mankind can never forget that you have lived. Future nations will know by history alone that the loathsome smallpox has existed and by you has been exterminated."

It is to be regretted that these prophetic words should not have been fulfilled in this country of progress and enlightenment. With the introduction of glycerinated animal lymph every vestige of prejudice against vaccination should cease and compulsory laws should be enacted in every State, so that smallpox here, as in the German army, may become practically unknown. While quite a number of States have enacted laws requiring that unvaccinated children shall not be admitted to the public schools the undue prevalence of the disease indicates that these laws are not rigidly enforced.

We can scarcely do better than to conclude our review with the following quotation from the report of the Conservation Commission, which is now in the hands of the Public Printer:

"Since the greatest of our national assets is the health and vigor of the American people, our efficiency must depend on

national vitality even more than on the resources of the minerals, lands, forests and waters. The average length of human life in different countries varies from less than 25 to more than 50 years. This span of life is increasing wherever sanitary science and preventive medicine are applied. It may be greatly extended. Our annual mortality from tuberculosis is about 150,000. Stopping three-fourths of the loss of life from this cause and from typhoid and other prevalent diseases would increase our average length of life fifteen years. There are constantly about 3,000,000 persons seriously ill in the United States, of whom 500,000 are consumptives. More than half this illness is preventable. If we count the value of each life lost at only \$1,700, and reckon the average earning lost by illness at \$700 a year for grown men, we find that the economic gain from mitigation of preventable disease in the United States would exceed \$1,500,000,000 a year. This gain, or the lengthening and strengthening of life which it measures, can be had through medical investigation and practice, school and factory hygiene, restriction of labor by women and children, the education of the people in both public and private hygiene, and through improving the efficiency of our health service, municipal, State and national."

Dr. G. Lloyd Magruder said that the paper would be of infinite value both to this city and to the whole country. He hoped that the Society would be actively interested in the crusade for a pure milk supply, the importance of which had been so clearly pointed out in the paper; the necessity for it is very great, from the standpoint of prevention of typhoid, tuberculosis and diarrheal diseases. The local conditions with respect to the milk supply of Washington had been graphically described in the report of the Health Officer, also in Bulletin 41, Department of Agriculture. To bad local conditions must be added certain natural and customary conditions which make the dangers of impure milk greater than elsewhere: for instance, in European cities all the milk is heated before being used and thus is purified; in Northern cities in this country the climate is colder and thus the transportation temperature is more easily kept low to the advantage of the milk. Neither of these favorable factors prevails in Washington and other Southern cities. It is very unfortunate that there is in Washington no bacterial standard to which milk supplied to the public must conform; but the influence of the crusade in other directions has made itself felt in an improvement in the average bacterial content in milk sold in this city. The

advice formulated and distributed by the Washington milk commission did much good in informing the consumers and making producers more careful; this sort of work should be continued until adequate legislative control can be instituted.

The danger of impure water supplies on dairy farms had not been recognized nor demonstrated until, in 1906, Dr. Magruder had secured the coöperation of the Department of Agriculture in the investigation of the question, and had clearly demonstrated the connection between dangerous water on the farm and dangerous milk in the city.

Dr. McPherson said that it was gratifying to know of multiplied and successful efforts to improve the public milk and water supplies; his own particular inclination was to attack a civic nuisance nearer home and more easily abated, viz: the urban chicken yard. It seemed strange to him that flocks of chickens are allowed to be kept in small yards in congested parts of the city, where their droppings and coops are excellent breeding places for flies, and where the garbage upon which they are so often fed is left half consumed to putrefy and saturate the air with unwholesome exhalations. This feature of the "shady side of Washington" seemed to him to be in urgent need of correction, and he had been endeavoring for a number of years, unsuccessfully and with much disagreeable notoriety, to secure legislation for the control of this evil.

Dr. Kinyoun congratulated Dr. Kober upon his very comprehensive review of late progress in sanitary science. Dr. Kinyoun had nothing to add except with respect to certain local conditions. The prevalence of typhoid fever in the District had always been a problem of great interest to him. A number of years ago the influence of public water supplies upon the prevalence of typhoid fever had impressed him, and he had for two years studied the water supplied to this city; after investigation for one year he had become convinced that Potomac water was a menace to the public health, and he had aided to his fullest ability the efforts which finally secured the construction of the filtration plant. With the filter in full operation typhoid fever still exists in this city in very uncomfortable proportions, and it is evident that the problem is not solved. In his report made at the time he was investigating the water supply, he had made the following statement: The treatment of Potomac water is a problem of itself, and requires a separate solution. His opinion was that the solution lay in sedimentation before filtration. The abundant content of silt in Potomac water at times would inevitably interfere with the proper working of the filter beds, and he had accordingly recommended the construction of adequate sedimentation basins. Such basins had never been provided. Now, while he did not believe that the water supply is responsible for all the typhoid occurring at this time, still it is true that on occasions colon

bacilli exist in the city water in uncomfortably large numbers. The rapid deposit of silt on the filter beds requires the frequent cleaning of them; after cleaning it is well known that sand filters are for a day or two ineffective and that the water is passed through practically raw. The mains are thus periodically filled with unpurified water, and the city is periodically left unprotected. Without the necessary basins for sedimentation, at times of great turbidity these breaks in efficiency are bound to occur, and their occurrence in no way reflects on the character of the filter plant nor on the way in which it is operated.

Dr. Chappell said that one of the charts exhibited by Dr. Kober seemed to carry conviction that pure water supplies reduce the prevalence of typhoid fever; it seemed to Dr. Chappell, however, that in order to carry conviction, it must be shown that no other causes have been operative to produce the same result. The experience of the City of Washington shows that some other causes than the water are at work here to spread typhoid fever; we are told that the house fly and the milk supply are at fault. But to conclude thus, the milk and the house fly must be exculpated in other cities, where the typhoid prevalence has been reduced by purifying the water. For accurate statistical purposes there should be comparative statements for all causes.

Dr. S. S. Adams said that we were given good water after the Potomac water had sent several Congressmen to their several rewards; he supposed that when the milk supplied the city gives enough trouble to Congressmen we will have remedial legislation with respect to that commodity. He agreed in the main with what Dr. Kober had said, but not *in toto*. For instance, Dr. Adams has had more trouble with infants fed upon milk pasteurized in a wholesale fashion by the dealers than he has had with infants fed upon raw milk. Milk pasteurized in bulk by the distributor deteriorates more rapidly than raw milk and gives a false sense of security to the consumer.

He did not believe that the mortality rate of typhoid fever had been reduced by improving the water supply; the morbidity rate had been undoubtedly lowered and the number of deaths had, of course, decreased, but the rate of mortality owes its improvement to improved methods of treatment.

Dr. Atkinson said that he regretted that there was so much talk about our pure water supply when, after all, the water is not pure. It seemed to him preposterous to spend so much money on the purification of water, when the source of the raw material was such a filthy mud hole. There is pure water somewhere; why could it not be obtained for Washington? The pure mountain springs can be reached; it would be no impossible thing to pipe the water from them to the city; it seemed to him that in spite of the gigantic character of the undertaking it would be worth while.

Dr. Borden asked Dr. Kober if he had formed any opinion as to why the death rate of typhoid fever in Japan is so very low. Did racial immunity play a part in the production of this result? The question has not been well worked out.

In the Philippine Islands typhoid fever is not very prevalent. Two facts are suggestive: little milk is used there, and there are few flies—the larvae of the flies being destroyed by an ant peculiar to the islands.

In the Japanese-Russian war the typhoid figures were low, both as to incidence and mortality; at the same time the conditions for the spread of the disease were prominent. Some protection by racial immunity suggested itself strongly. In Japan there is no protection of public water supplies; the inference he would draw being that the race is not susceptible, rather than that contaminated water has no influence on the spread of the disease.

Dr. E. L. Morgan made a few remarks which the Secretary was unable to catch for record.

Dr. Kober in closing said that he believed Dr. Borden was correct in attributing the low typhoid figures in Japan to racial immunity rather than to sanitary precautions; one reason for this belief is that under like conditions no such statistics obtain in any other country.

To Dr. Adams he replied with the query: If improved methods of treatment are responsible for the improved death rate, why should his statistical chart show such sudden changes, as for instance, an improvement of 70 per cent. in the death rate of Cincinnati in two years? And why should improved methods of treatment, improved water supply and diminished death rate be synchronous?

The water-borne character of typhoid fever has been so well demonstrated that the etiological rôle of the house fly has been shown to be operative in only about 15 per cent. of the cases. So far as the milk-borne cases are concerned, the majority are after all water-borne, because the milk becomes contaminated most often by means of infected rinse water or water added for dilution. As regards the water supply of this city, the use of a coagulant or mechanical filtration was urged during the agitation for the establishment of a filtration plant, and since then the necessity of such treatment for part of the time has become apparent. Periods of increased turbidity do have a distinct influence upon the bacterial efficiency of the sand filters, and preliminary sedimentation by gravity or the use of a coagulant at such times would serve to keep the sand filters at a maximum and uniform efficiency.

Dr. McPherson's suggestions as to the influence of the practice of keeping poultry in city yards upon the health of the community were important; such a practice could have no sanction

from sanitary science. This particular feature of urban life entered into the whole question of dirty back yards—a problem which was of considerable gravity and should be solved.

THE LIFE OF THOMAS SYDENHAM, M. D.,
1624-1689.*

By JOHN BENJAMIN NICHOLS, M. D.,

Washington, D. C.

Thomas Sydenham, who lived in England 1624-1689, has the reputation of having been one of the greatest physicians of all time, and of having exerted an epochal influence in the development of medical science.

Sydenham lived in a propitious age for great minds, the time when in England the Renaissance was in full swing, in science, religion and government. Mankind had just awakened from the intellectual torpor that had prevailed throughout the Middle Ages and had cast off the shackles of ecclesiastical domination and mental censorship. In all lines of human activity a mighty upheaval, uplift and upgrowth was in progress, and the genesis and development of various sciences was proceeding with great vigor. Lord Bacon (1561-1626) had pointed out the inductive method—a method repugnant to the ancient and medieval mind—by which alone knowledge could be placed on a sound basis. Sydenham's century saw Galileo (1564-1642) and Kepler (1571-1630) in astronomy, Newton (1642-1727) in physics, Harvey (1578-1637) in physiology. It saw the early advances in microscopy, histology, zoölogy and botany. The Royal Society, a powerful influence in the promotion of scientific research, was founded in 1660, and the brilliant thinkers who formed its early membership were contemporaries and neighbors of Sydenham.

Medicine had made very little advance since the time of Hippocrates, two thousand years before the Renaissance. The awakening in medical science first showed itself in the 16th century in the development of anatomical knowledge, under Jacobus Sylvius (1478-1555), Eustachius (1500-1574), Vesalius (1514-1564),

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Fallopian (1523-1562) and others in that and the 17th century. In the 16th century also Paré (1510-1592) had greatly advanced the art of surgery. Internal medicine, pathology and therapeutics, however, were in Sydenham's time still in much the same condition as they had been through the centuries since Hippocrates. The dominant pathological conception was the humoral theory, and the men who had attained prominence in internal medicine had been mainly commentators on Hippocrates or originators of evanescent theories arising out of the humoral pathology.

The 17th century was also one of the most momentous periods of the world's history for the political and social transformations accomplished during it. England during this period underwent a transformation from the autocratic rule of her former monarchs to the supremacy of the people characteristic of the present age; a transition from the ancient feudal and absolute régime to modern democratic institutions. This transition was brought about during the reign of the Stuart kings, from their weakness and inefficiency and inability to retain the prerogatives which for centuries had been sternly asserted by the English sovereigns. Sydenham's life was almost exactly contemporary with the reigns of the last three Stuart kings, Charles I to James II—a period of civil war, revolution, social turmoil, political and religious upheaval—and he personally was an active participant in the revolutionary movement.

Such were the times and environment and influences surrounding Sydenham. It was an age of protest, of boldness, independence and originality in thought, of tearing loose from the bonds of the past. It was a favorable age for research and discovery, when the secrets of nature were being greedily searched out by eager, inquiring minds; when at the same time that there was a mighty stir of the spirit within to expand in learning and philosophy, the bonds that from without had tightly confined human thought were burst asunder, and the soul was freed to develop and fructify in the sunshine of that glorious springtime of science.

Thomas Sydenham was born in 1624 at Wynford Eagle, Dorset, England.* He was the fourth son of William Sydenham, and belonged to a family of substantial estate and importance in

* The biographical details are mainly derived from the Dictionary of National Biography.

the county. This family during the civil war and Commonwealth was actively attached to the party and government of Cromwell; at least four of William Sydenham's sons (including Thomas) served as officers in the Puritan army, two of whom were killed; the eldest son, Colonel William Sydenham, was a prominent officer and official in Cromwell's army and administration—so prominent and obnoxious that he was one of the few excepted from indemnity at the restoration of Charles II in 1660; and Thomas Sydenham's own mother was slain during the civil war by a royalist officer.

Thomas Sydenham's education was greatly interfered with by the commotions of the civil war. He entered Oxford, May 20, 1642, but the war breaking out in the following August, he engaged in the Parliamentary army and saw active service as a captain of cavalry, from 1642 to 1646. After this, while returning to Oxford to take up his interrupted studies, he met Dr. Thomas Coxe, who was attending his brother; and it was the advice of Coxe that led Sydenham to undertake the study of medicine. He entered Wadham College, Oxford, October 14, 1647; and after only a few months' study, and in an irregular manner, he was made M. B., April 14, 1648. He became a fellow of All Souls' College, Oxford, October 3, 1648, and retained this appointment until 1655, interrupted by another period of military service in 1651, during which he was severely wounded. During the time 1648-1655 Sydenham prosecuted his medical studies with such scanty facilities as Oxford afforded. He received instruction in anatomy and apparently had bodies for dissection. There was no hospital for clinical study, and instruction in medicine consisted in the reading of Hippocrates and other ancient medical treatises.

In 1654 he received a grant of 600 pounds from the Government for his military services and arrearages due his two brothers who were killed in service. With the aid of this grant Sydenham in 1655 married and started the practice of medicine in Westminster (London). He dabbled in politics, however, running unsuccessfully for Parliament in 1658, and in 1659 being appointed "comptroller of the pipe." About 1659 he went to the ancient and famous school of Montpellier to prosecute medical study there. Returning within a year or two he again took up medical practice at Westminster. He did not obtain legal

warrant to practice medicine until 1663, when he became a licentiate of the College of Physicians; he never obtained the higher grade of Fellow of this body. In 1676 he was granted the degree of M. D. at Cambridge.

During the summer of 1665, while the great plague was raging in London, Sydenham, like other physicians and two-thirds of the population, withdrew from the pestilential city. According to Pepys (Diary, October 16, 1665) there were at this time no physicians and only one apothecary left in Westminster, all being dead or fled. Sydenham stated that he left on account of the persuasions of his friends; other physicians excused their flight on the ground that as their clientèle had fled there was nothing to require their remaining in the city.

The remainder of Sydenham's life was devoted to his professional work in Westminster. During the last forty years of his life he suffered much from gout and calculus, and his activities were greatly restricted by his ill health. He was not actively identified with the scientific movements of his time, and his writings indicate the existence of some hostility between him and his medical colleagues. Belonging, as he had, to the Puritan party, he was probably not associated with the court circles or court physicians. He apparently had no hospital connections. Two eminent physicians are known to have been pupils of Sydenham, viz: Sir Hans Sloane and Thomas Dover (of "Dover's powder" fame). He died in 1689, of calculus, in the house in Pall Mall which he had occupied for many years. He left three sons, one of whom, William, also became a physician.

Sydenham published five works during his lifetime, and one was issued soon after his death. These writings went through repeated editions, both in England and the Continent, and have been many times published in collected form, in at least four or five different languages. As late as 1809, and again in 1815, an American edition of Sydenham's works was published, with annotations adapting them to the advances in medicine and to American conditions, by Benjamin Rush, showing that even at that date the works were still available as manuals of medical practice. The works were not very voluminous, the Sydenham Society's English edition of 1840 comprising 663 octavo pages (including appendices and notes)—about half the size of Osler's Practice of Medicine.

There has been considerable controversy as to whether Sydenham wrote his works originally in Latin or English. At a time when Latin was the language and the vehicle of learning and proficiency in Latin was the mark of an educated man, this may have been a question of some moment; yet to us, with our present regard for matter rather than form, it seems of trivial consequence.

Sydenham's works were as follow :

1. "Methodus Curandi Febres," a book of 156 pages, first published in London in 1666, and in its third edition, in 1676, expanded into the "Observationes Medicae circa morborum acutorum historiam et curationem," a work of 425 pages.

2. "Epistolae Responsoriae duae, prima de Morbis Epidemicis ab 1676 ad 1680 ad Robertum Brady, M. D., secunda de Luis Venereae historia et curatione ad Henricum Paman, M. D." London, 1680.

3. "Dissertatio Epistolaris ad Gulielmum Cole, M. D., de observationibus nuperis circa curationem variolarum confluentium necnon de affectione hysterica." London, 1682.

4. "Tractatus de Podagra et Hydrope." London, 1683.

5. "Schedula Monitoria de novae febris ingressu." London, 1686.

6. "Processus Integri in morbis fere omnibus curandis." London, 1692 (posthumous).

Sydenham's reputation was made by his writings, especially by his first work, the *Observationes Medicae*, which is alleged to have been of epochal importance in the history of medicine, and which rapidly spread its author's reputation through Europe. He attained recognition abroad more quickly than at home; but by the time of his death, or within a decade afterward, he had acquired the high esteem of British physicians, began to be called the English Hippocrates, and has ever since been ranked as one of the most eminent physicians of history.

Sydenham's contributions were entirely within the realm of clinical and internal medicine and therapeutics. His subject matter may be considered under three heads, viz: his descriptions of clinical phenomena, his pathological speculations and his therapy.

His celebrated description of the symptoms of gout is very vivid and graphic, his own sufferings from this disease giving point to his pen. He wrote of the protean manifestations of hys-

teria with comprehensive insight, and his description of the chorea of children has led to the use of his name as the eponymic designation for this malady (Sydenham's chorea). Gonorrhea and syphilis he described as different phases or manifestations of the same disease (the "venereal disease"). In general, however, his account of the symptomatology of the various diseases, especially of fevers (on which his fame so largely rests), is very scanty.

His speculations and conceptions of the pathologic processes taking place in disease were very extensive, profuse and subtle and comprise a large part of his writings. His pathologic theory is epitomized as follows in the opening paragraph of his "Observationes Medicae:"

"A disease, however much its cause may be adverse to the human body, is nothing more than an effort of Nature, who strives with might and main to restore the health of the patient by the elimination of the morbid matter." The maladies to which the human frame is subject, he continues, "arise partly from the particles of the atmosphere, partly from the different fermentations and putrefactions of the humors. The first insinuate themselves amongst the juices of the body, disagree with them, mix themselves up with the blood, and, finally, taint the whole frame with the contagion of disease. The second are confined within the body longer than they ought to be, its powers having proved incompetent, first to their digestion, afterwards to their excretion."

Sydenham's pathology was the humoral pathology which had dominated internal medicine from the time of Hippocrates. Two distinctive doctrines stand out dominant in Sydenham's teachings, first, the healing power of nature, and, second, the influence of atmospheric conditions in causing acute disease.

The *vis medicatrix naturae*, the curative action of fever, etc., is repeatedly emphasized by Sydenham; to imitate and favor, and not to oppose, what he held to be the natural curative processes of nature, was professedly a cardinal basis for his therapy.

The influence of atmospheric conditions in causing and determining the type of epidemic fevers and acute diseases was a cardinal doctrine of Sydenham's. He believed that subtle and obscure atmospheric changes in different years, and in different seasons of the year, caused corresponding differences in the type,

or "epidemic constitution," as he termed it, of the epidemic diseases that prevailed from time to time. The different febrile diseases were not well differentiated in those days; intermittent fever, plague, some of the exanthemata, etc., were distinguished, but most of the other fevers, influenza, typhus, typhoid, septicemia, etc., were regarded as one common disease—"continued fever"—with varying manifestations in different individuals and at different times.

The foundation of Sydenham's pathologic philosophy was the humoral pathology. In a crude state of medical science the humoral pathology is not without plausibility; and the results of investigations in progress at the present time on the body sera are leading us even now to a sort of revival of this ancient dogma, a neo-humoral pathology on a refined and sound basis.

According to the humoral theory as expounded by Sydenham the matters producing the morbid conditions were located in the blood and other body fluids, being engendered by putrefactions, fermentations, foreign matter from the atmosphere, or other causes. These morbid substances during the course of the disease were supposed to undergo a process of maturation or ripening—"concoction" it was termed—in preparation for their final expulsion from the body. The blood was conceived to be in a state of violent internal agitation, or commotion, or ebullition, or inflammation, as it was variously termed. The local manifestations of diseases, such as exanthems, abscesses, inflammatory lesions (as pleuritis), etc., were regarded as due to the discharge of the morbid matters or the agitation of the blood at these points.

Thus, the "crimson blotches" or petechiae of plague were due, in Sydenham's words, to "the fibers of the blood being torn asunder by the stress of the intestine struggle, and the structure of its tissues being wholly destroyed." Apoplexy was stated to arise "from the investments of the brain being overloaded with an excess of phlegm, whereby the tracts and highways of the animal spirits are stopped up."

Sydenham's account of the causation of cough in one of the continued fevers described by him may also be quoted as a characteristic example of his viewpoint:

"It often happens that the patient is harassed by a troublesome cough during the whole course of the disease. No wonder; the volume of the blood is in vehement commotion; it has grown

tumultuous; there is a faction, and sedition, and rebellion among its elements; its humours are let loose; they take leave of the general mass; they ooze through the vessels of the lungs; they spring out upon the membranes of the trachea, and these membranes are very delicate, and exquisitely sensitive. Hence comes cough. It is dry at first, because the matter is subtle, and escapes the efforts to expel it. It afterwards brings up thickened sputa, the expectoration whereof is difficult, inasmuch as the fever has taken its time to bake it hard, and to parch it dry."

Sydenham aimed in his therapeutic practice to follow as a guide the curative processes of nature—as he interpreted them—imitating and promoting the natural processes by which the organism tends to overcome disease (save in those exceptional cases, as plague, where the natural reactions were deemed clearly harmful).

Sydenham's favorite and most employed therapeutic resource was venesection. In very few diseases (gout being one) did he discountenance this procedure. He urgently advocated bleeding, early, repeatedly and copiously, in nearly all disorders, as fevers, plague, smallpox, rheumatism, pleurisy, gonorrhea, colic, dysentery, menorrhagia, hemoptysis, epistaxis, hysteria, piles, bruises, asthma, mania, phthisis, scurvy, etc. He even bled children and infants, as in chorea, pneumonia and diarrhea following measles, whooping cough, and convulsions during teething. For the latter, he says, bleeding "is better by far than all the most vaunted specifics." For whooping cough he testifies to the "immense relief" afforded by venesection, and that "it leaves far behind it all pectoral remedies whatsoever." As to its employment in pneumonia after measles, he says "Under Divine Providence, I have saved many infants in this way, and I know of no other."

The rationale of bleeding, from Sydenham's viewpoint, was that it aided nature in expelling the morbid matters in the blood. The character of the clot was deemed an important diagnostic point.

He rather favored the early use of emetics to expel peccant substances from the stomach. He was very chary of purgation, sweating and blistering, and opposed their use in many cases, arguing that they interfered with the proper concoction of the humors that was essential to their final evacuation from the body.

A marked feature in Sydenham's therapy was his cooling regimen, that is, keeping his patients lightly clad instead of

warmly covered in bed. To this end he kept his patients much out of bed, in their ordinary or light clothing and all day long, even during severe fevers, smallpox, etc. This was on the theory that external cold lessened the heat and inflammation of the blood.

Expectant and hygienic treatment was advocated by Sydenham in certain cases. Horseback riding he lauded in the highest terms for gout and other chronic disorders, and above all for phthisis, regarding it as a specific in this disease. He said :

“Deadly as phthisis is, killing two thirds of those who die of chronic diseases, it has a specific in riding, as truly as ague has in bark, or the venereal disease in mercury; provided only that the journeys are long enough, and the beds at night are well aired.” And in another place: “Of all the remedies for phthisis, long and continued journeys on horseback bear the bell. * * Bark is no surer a cure for ague, than riding for phthisis.”

He used drugs freely, and his formulae include interesting examples of polypharmacy, some of them containing 23, 24 and even 32 ingredients. Venice treacle, an ingredient of some of his prescriptions, according to the London Pharmacopoeia of 1682 contained 65 ingredients, including “Lozenges of vipers (flesh and broth).” One of Sydenham’s formulae included “Frog-spawn water.”

Sydenham was one of the earliest to recognize the value of Peruvian bark, which was first introduced into Europe about 1632, and into England about 1655, in the treatment of intermittents, and he also realized its comparative uselessness in other fevers. One of his strong claims to fame rests on his instrumentality in promoting the adoption of this drug in medical practice.

The specific value of mercury in syphilis and the usefulness of “steel” (iron) for chlorosis were known to him. The use of opium in a great variety of conditions he highly commended, and he introduced a celebrated formula for “liquid laudanum,” later the vinum opii of the Pharmacopoeias. Concerning this drug he said :

“I cannot but break out in praise of the great God, the Giver of all good things, who hath granted to the human race, as a comfort in their afflictions, no medicine of the value of opium, either in regard to the number of diseases it can control, or its efficiency in extirpating them.”

Sydenham's writings display a lofty moral tone and, as would be expected from his Puritan connections, a pious and devout attitude. He professed to have based his doctrines and methods on careful observation and experience, especially on the results of therapeutic practice, and to have avoided speculation. He had superb confidence in the verity of his own opinions and the efficiency of his therapy. There was considerable acrimony between him and those with whose opinions he disagreed; he applied to them such epithets as "ignorant dogmatists," "arrogant," "impertinent," "supercilious," "bird-witted," etc.; and yet he felt aggrieved at the criticisms of his opponents. He expressed high appreciation of the teachings of Hippocrates.

We may now consider the actual character and worth of Sydenham's contributions to medicine, and estimate the validity of the grounds on which his great fame rests.

His clear descriptions of the symptoms of hysteria, chorea and gout are classical, and show keen powers of observation and an accurate appreciation of these diseases. He is credited with some share in the differentiation of hysteria and chorea. His help in introducing the use of cinchona was a service to mankind. His simplification of the extravagant theories and methods of his predecessors and contemporaries was a great advance. His expectant and hygienic regimen in certain cases was rational and conservative, and some of his therapeutic suggestions were clever.

Aside from these contributions, however, the great bulk of Sydenham's work at the present time is obsolete and valueless.

His recognition of the *vis medicatrix naturae* was very laudable in theory; but as his idea of assisting and imitating nature was vigorous bloodletting we may question the correctness of his interpretation of natural processes. His celebrated cooling treatment of fevers may have been an improvement over previous methods; yet at the present time it would hardly be considered advisable to follow Sydenham's practice of keeping patients at the height of smallpox or typhoid fever up and dressed and out of bed all day long. His observations on fevers and epidemic diseases, on which his fame was mainly established, are almost wholly valueless; his vaunted observations of symptoms were really merely suppositions as to the changes which the blood underwent during the concoction of the humors. His speculations on "epidemic constitutions" entirely missed the mark, and aside

possibly from intermittents or malaria, he contributed practically nothing to the differentiation of the different continued fevers. His methods of studying disease have been held up as models; but while Sydenham professed to base his doctrines upon direct observation of disease phenomena and therapeutic results, rejecting theory and dogmatic authority, as a matter of fact he did almost the exact opposite. In spite of his protestations to the contrary, Sydenham's published works show him, with a few brilliant exceptions, to be a great theorizer, but not a great observer.

With his lights and his mental attitude Sydenham may have been a practical clinician, placing the interests of the patient and the success of treatment as the foremost considerations. Yet his main therapeutic methods have been entirely discredited, and his favorite practice of phlebotomy is now generally regarded as having done far more harm than good. This affords one example out of hundreds of similar ones in the history of medicine of how fallacious mere clinical experience may be when not established on scientific principles.

Sydenham did not have the true scientific method. "It is my nature to think where others read," boasted he. But thinking is not the first element in scientific research. Said John Hunter to Jenner, when the latter began to ponder on the subject of vaccination, "Do not think; investigate!" Sydenham theorized without having an adequate basis of fact. He did not catch the spirit of the renaissance, which was in full activity about him. He apparently did not associate with the brilliant scientists of his time. He ignored anatomy, physiology, and pathologic anatomy as revealed at necropsy, in formulating his doctrines. It was not till true and scientific study of the objective phenomena of disease was carried out that the real awakening in internal medicine, pathology and therapeutics came; this renaissance has only taken place within the lifetime of men now living, and even yet is in progress. To this revolution, which brought about the final overthrow of the humoral theory and antiphlogistic therapy, Sydenham contributed nothing, if, indeed, his influence did not retard it.

For his time Sydenham may have been independent and original in thought and practice; yet his innovations were for the most part no better than the doctrines which were supplanted.

His influence may have been epochal, but simply as an epoch in the history of a false philosophy. His system was one of the many phases through which the humoral pathology passed in its long existence, a phase as evanescent as many similar systems that had preceded it and others which followed it.

Dr. James Dudley Morgan said that we are indebted to Dr. Nichols for a discriminating and literary production on Sydenham. By reverting to the old masters in medicine Dr. Morgan believes that the tone and respect for the profession will be much raised. That Thomas Sydenham, living mostly in the latter part of the seventeenth century, should have left at least a few milestones in that great period of doubt and upheaval, is to be admired and wondered at. He evidently was a man of action, of a rugged, determined disposition. He studied medicine and sifted out for himself by observation what he thought was good or not. He attended the Montpelier School, and although taught there the expectant and tonic treatment, with little purgation and venesection, contrary to the Paris School, he threw over the tonic and purgation systems and held to the expectant and the venesection. He lived in the time of great men, and Heberden and Sir Hans Sloane were perhaps his closest friends. He fitted the description of the disease to the term scarlatina, and really to him we owe the entity of scarlet fever. His descriptions of hysteria, chorea and gout are classic today. His praise of Peruvian bark and the use of laudanum could not be done better in our day. He seems to have understood that changes in the temperature and moisture of the air often reacted upon his patients. He believed, as we do today, that we must aid Nature in curing disease.

STUDY OF 550 CASES OF TYPHOID FEVER IN CHILDREN.* ABSTRACT.

By SAMUEL S. ADAMS, A. M., M. D.,

Washington, D. C.

Three hundred and thirty-seven cases were reported in 1903, and 213 additional cases have been treated in the Children's Hospital of the District of Columbia since that time.

Of the 550 cases 420 were treated during July, August, September and October. There were 296 boys and 254 girls; 23

* Read before the Medical Society, April 28, 1909.

cases under two years, 77 at 11 years of age, which represents the minimum and maximum ages.

As early as 1872 the oyster was recognized as a carrier of the bacilli in one case.

Perforation was found in 17 cases, all being of the ileum; 28 deaths resulted from hemorrhage.

Rose spots were present in 133 cases, but as about 20 per cent. of the cases were negroes the percentage is not accurate. Epistaxis was found in 4.9 per cent., in one case being fatal. Convulsions occurred in 16 and post-typhoidal insanity in 9. The fever is described as being mild in 264; moderately severe in 132; severe in 142; irregular in 2; sudoral in 10. There were 48 relapses, 4 cases having 2 each.

Mortality.—There were 65 deaths, a rate of 11.8 per cent., a number of the children having died within 24 hours after admission. From 1872 to 1882 the mortality was 30.76 per cent.; from 1882 to 1891 it was 20.33 per cent.; from 1892 to 1903 it was 11.1 per cent.; from 1903 to 1908 it was 7.9 per cent.

Various methods of treatment have been pursued during the time stated, and of late liberal feeding is assumed to shorten convalescence and prevent post-typhoidal complications.

Dr. Wall expressed his appreciation of the essay; the study of this series of cases was especially valuable because the series extended over several decades and served to pass in review the varying methods of treatment in vogue from time to time. The record of 3.6 per cent. as the proportion of perforations in children deserves emphasis as it is only one-half the expectation of this accident in adults with typhoid fever. So far as the outdoor service at Children's Hospital is concerned, his experience had led him to believe that the onset of enteric fever in children is apt to be abrupt and accompanied with pain in the head and abdomen, the abdominal pain often being occasioned by distended bladder. He bore witness to the valuable effects of liberal feeding during the disease; under this régime the convalescence is more rapid, the patient being able to sit up in 10 to 14 days.

Dr. Roy said that under the head of etiology, contagion was ascribed as the cause in a number of cases. It seemed to him that cases originating in the same house should not be charged to contagion unless pretty clearly demonstrated to be due to contact; inmates of the same house live under the same conditions and are thus exposed to the same original causes. He believed that more liberal feeding is largely responsible for the great low-

ering of the typhoid death rate; on the other hand, formerly many deaths could be ascribed to starvation.

Dr. Frank Leech said that he had been much interested in the essay, particularly so as many of the cases of the series had come under his observation at the Children's Hospital. As to the treatment of typhoid fever, during the past summer he had had opportunity to observe the effect of the so-called irrigation treatment; 24 of the cases included in the paper had been so treated, although not all of these had been conducted on this plan throughout the attack. The method consists of frequent irrigation of the bowel with salt solution or plain sterile water, together with the administration of a milk-free diet—the diet consisting of soft foods, such as gruels, softened zwieback, four-hour rice, etc. Those cases which had been consistently treated in this manner did very well; the course of the fever was shortened, tympanites was absent, there were few nervous symptoms and few baths were required. Moreover, the convalescence was quicker than in strictly milk-diet cases, or than in cases kept entirely upon a variety of liquids. He has also had excellent results with the use of this method in private practice and he had no hesitation in endorsing it.

Dr. Acker said, as to the diagnosis it is difficult to recognize typhoid fever in children until the second week; the symptoms may so easily be those of pneumonia, central in location and slow in coming to the surface. Holt makes the statement that the diagnosis may most often be made upon the appearance of rose spots or the enlargement of the spleen; Dr. Acker's own experience had been that rose spots are very often absent throughout the attack, and that it is usually hard to feel the spleen at all.

Dr. Adams's résumé of the methods of treatment in vogue from time to time reminded him that he himself had strongly endorsed the use of antipyrin just after the introduction of that remarkable drug years ago; his opinion had changed.

He still uses the milk and broth diet. The feeding depends so much upon the individual case; he recognized that some mild cases may take semi-solid food without harm; but the very toxic cases, cases with high fever, and severe digestive disturbances, these have to be fed with the utmost care, and even the blandest liquids are not well borne at times. The irrigation treatment mentioned by Dr. Leech had seemed to do very well; but his own test cases, under the usual régime of milk diet, did about as well, and he saw no reason to change his method.

Dr. Hagner said that Dr. Wall had spoken of the abdominal pain caused by distention of the bladder; this reminded him of a statement made by Dr. Alexander, of New York, to the effect that at Bellevue Hospital there is a rule that requires that the urinal be taken to every patient every two hours, and that urination be insisted upon. This procedure serves to keep the bladder function intact, and distention is seldom encountered.

Dr. Wellington said that so far as the surgical aspect of typhoid fever was concerned, there had been four cases of perforation at Children's Hospital during the summer, an unusually high rate of incidence. In two of these cases operation was refused. One was operated upon twelve hours after perforation; in the other, thirty hours had elapsed; both were *in extremis* and both died. The diagnosis of perforation is unusually difficult in children.

Dr. Kober said he wished to add his voice to the plea for more liberal feeding in typhoid fever. Dr. Kleinschmidt, as long as 25 years ago, had advocated in this Society a liberal diet, and he did not hesitate to give even a tender chop in the course of the disease; he found that only good resulted from it. It seemed reasonable to believe that complications will be less frequent and less severe when the body is fed sufficiently well to be resistant to any chance secondary infection. And the mention of secondary infection led him to refer to Edsall's plea for medical asepsis; surely nothing could be more important than the use of aseptic implements, whether for feeding, or bathing, or irrigating the bowels, in the management of a patient already prostrated and battling with one type of infection.

Dr. Jas. Dudley Morgan said that only by the study of a long series of cases covering many years can positive conclusions be reached. The type of disease prevailing in different years may vary greatly, so that what may be true this year may be erroneous twelve months hence. His experience coincided with that of others who had spoken, that the symptoms in children are apt to be very pronounced, and that distention of the bladder is a frequent and troublesome difficulty. He thought this collection of cases a valuable contribution to the study of typhoid fever.

Dr. Chappell said that at one time the prevalent opinion had been that adolescence is the age at which typhoid fever is most fatal, and he still retained that impression. He had observed that no age is exempt. He had seen many cases of the disease among the infants at the Foundling Hospital; at first he had been much surprised, but the cases were indubitable. He had also met with the malady occasionally among old persons. He still was of the opinion that typhoid fever is a three weeks' disease—he had seen so many cases which terminated on the 21st day. He met with few cases which seemed able to take solid food; in most instances the anorexia is so complete he contents himself with following nature's hint and leaves the digestive tract at rest as nearly as possible. On the other hand, he had seen much harm done by the administration of solid food. So far as the general management of the disease is concerned, there is little or nothing to be gained by giving medicine.

Dr. Williams said much mention had been made of the occurrence of distention of the bladder in the course of typhoid fever;

it seemed possible that an explanation might be found in the observations made by Rolleston upon the abdominal reflexes in this disease. Rolleston had found that in the course of typhoid the abdominal reflexes are obtunded or disappear; in such cases the bladder reflex also disappears, since the neurons concerned in the two reflexes enter the cord at about the same level. The practice of requiring patients at Bellevue Hospital to empty the bladder every two hours, referred to by Dr. Hagner, is, of course, merely following out one of the commonplaces of the treatment of *tabes dorsalis*.

Dr. S. S. Adams said that his statistics had been gathered from the records as they are filed at Children's Hospital, and had not been edited or "doctored" in any way. As to the irrigation treatment, he stated in the paper that he had arrived at no definite conclusion as to its value; he was aware that Drs. Leech and Wall were enthusiastic about it, but Dr. Acker had seen no decided improvement over the results obtained by the routine method. In answer to an inquiry as to what was meant by his reference to the antiseptic treatment, he said that he meant the administration of salol, guaiacol, or other intestinal antiseptics. The Woodbridge treatment had never been permitted in the institution. The routine treatment at present is simply dietetic, with bi-daily baths; extra sponging is given for high temperature. Of course, he did not advocate the liberal feeding of children who were unable to digest the food; but his experience had been that when the children had been able to take a comparatively abundant diet the convalescence had been more satisfactory.

THE XVITH INTERNATIONAL MEDICAL CONGRESS.—Secretary-General, Professor Emil Grósz, M. D.—Office, Budapest, VIII, Esterházy-uteza 7.—In accordance with the resolution passed at Lisbon on the 26th April, 1906, the XVIth International Medical Congress will be held at Budapest from the 29th August till the 4th September, 1909, inclusive.

THE ANNALS will publish any local medical news concerning the hospitals, colleges and other institutions in this District, and the personnel of the same, whenever such news would be of general interest; provided, of course, that the information is given by persons who are known to the Editorial Committee.

NAPOLÉON was hurrying back towards Paris from the field of Waterloo. He said to an aid: "Well, I have met it good and hard at last, but nobody can say that it was my whiskeyloo."

SOME OF THE PERPLEXING COMPLICATIONS
FOUND IN GALL-STONE SURGERY.*

By I. S. STONE, M. D.,

Washington, D. C.

The diagnosis of a case of gall-stone disease is comparatively easy when the pain is followed by jaundice and when a stone is found in the stools. Otherwise, however, it is very difficult. We have but little to boast of when we attempt to decide between the symptoms of calculi in the gallbladder and ducts and those of certain other abnormal conditions. It is very easy to assert that pressure over the gallbladder with the hand will cause pain if stones are present. I utterly refuse to assent to such a statement. In fact, there is so much doubt about the presence of stones that in most cases the surgeon will do well to make no rash predictions whatever before he operates. But this gives us an opportunity to say emphatically that the indications for operation should be based upon the clear evidence of disease which demands surgical treatment, and that stones may or may not be present. We happen to know that the symptoms of ulcer of the stomach or duodenum and those of gallbladder disease are in many respects not unlike, and that a diagnosis is often either difficult or impossible. The particular variety of gallbladder which is giving the writer most trouble in his surgical experience is the contracted kind, and it is in this that he finds most difficulty in locating, both before and during operation. Having commented upon the difficulties of making a diagnosis, we now suggest that, once having decided to open the abdomen, we may find certain conditions which may prove embarrassing to any operator, and it is our purpose to mention some of them in order that we may to some extent anticipate such complications.

The contracted gallbladder.—A proper study of the anatomy of the under surface of the liver, the bile ducts, the duodenum and the adjoining mesentery, is a prerequisite to the successful performance of most of the operations upon these organs. We know of nothing easier than to open the gallbladder, remove a stone, secure the viscus to the abdominal wall and close the wound. *Per contra*, we believe the changes occasionally seen about the

* Read before the Medical Society, April 7, 1909.

gallbladder, which are due to infection of the biliary ways, constitute a series of complications which are quite as formidable as any found in the abdominal cavity. A recent case will illustrate my meaning. A lady had all the symptoms of gallbladder disease for five years. The diagnosis made by several physicians was, "gallstones." We agreed to this, and operated with the expectation that we would find abundant evidence of former inflammation. In this we were not disappointed. When we attempted to find the gallbladder we encountered such changes as made it almost impossible to locate the viscus, even after a long and tedious search. The gallbladder had a most peculiar, although not infrequent, attachment to the liver which we had not previously observed in operations upon the bile ways. The bladder was surrounded by and imbedded in liver tissue which obscured nearly all the organ except the cystic duct. The cystic duct was located by first finding the common duct, which in this instance contained a small calculus and enabled us to cut down upon and open the duct, remove the stone and then prove our position by sounding the cystic and hepatic ducts. The cystic duct was exceedingly short and the gallbladder a "tube," which we had thought possibly the hepatic duct. It was impossible to believe we had located the gallbladder until we had separated adhesions and worked out each duct separately. It would have been infinitely easier to have tied the common or hepatic duct than it was to find and prove that we had found the gallbladder. After the exposure of the gallbladder we tied off the cystic duct and enucleated the mucosa by finger and forceps. To have divided the bridge of liver tissue which covered the gallbladder would have necessitated some delay and perhaps severe hemorrhage. The fact that this patient had but few and comparatively small calculi in her gallbladder has been overlooked in view of the more important anatomic and pathologic changes we have mentioned, and emphasizes the point we have made, that they (the stones) are but casual in their relation to the changed conditions found at the time of the operation.

Our experience with contracted gallbladders has convinced us that all the symptoms are unreliable and often misleading. While it is often possible to palpate a large and distended gallbladder, it is absolutely impossible to rely upon physical examination to guide us in diagnosis. These patients have had a

chronic or persistent cholecystitis which, with the results of local inflammatory mischief, serve to render difficult any operative procedure. The contracted gallbladder is usually associated with other disease; usually we find stones in one of the ducts. The result of careful examination of the hepatic duct has shown us that Kerr is right when he claims that many, and perhaps most, cases of biliary disease demand inspection and probably drainage of the hepatic duct. In proof of this assertion we find it necessary to search for stones in the hepatic duct in every operation for bile obstruction, and we are occasionally rewarded by finding them when their presence was not anticipated. This fact has been forced upon the attention of surgeons. One of the most embarrassing of all sequels to operations upon the biliary passages is to see our patients develop severe pain and other symptoms of gallstone colic after we have performed what has been called a satisfactory operation upon the gallbladder, perhaps a cholelithotomy, or even a cholecystectomy. It is possible that stones frequently form in the hepatic duct and migrate into the gallbladder and cystic duct. This is not to be expected if the cystic duct is of normal size, and especially if it has its usual short curve or spiral conformation.

Complications which may arise after cholecystectomy.—A few years ago we prepared a paper for the Southern Surgical and Gynecological Association, in which we quoted the opinions of several of the more experienced surgeons as to the propriety of this operation. Dr. Maurice Richardson was inclined to favor the operation, and said that he was performing the operation relatively more frequently. William J. Mayo was removing a good number of gallbladders, but was rather conservative. Mayo Robson was still more conservative. Our conclusions were, in the main, that there was no excuse for the removal of a comparatively healthy gallbladder and that it might prove an unfortunate operation should it become necessary to operate a second time. Since that time every experience with the operation seems to fortify this view. So far as the immediate effect was concerned, the results of nearly all operations for diseased gallbladder in which the organ was removed have been typically good. The patients have usually had no alarming symptoms during the time they were in bed. There is generally very little fever and never have we seen unusual nausea or vomiting. Twice we would have

had serious results after cholecystectomy but for the presence of a drainage tube. The chromic gut ligature had softened and slipped from the duct or in some way permitted the free escape of bile until final closure some weeks later. In one of these cases we think the mischief due to pancreatic complications, for we had fat necrosis of the wound. In at least three cases we have seen attacks of gallstone colic after cholecystectomy. One of these has recently passed a stone, two years or more after the original operation. In this case the stones were of flat shape with rather sharp corners, but of small size, being somewhat over an eighth of an inch in diameter.

We know that the cystic duct is greatly dilated by the passage of calculi and that stones of large size pass into the common duct, and we thus reason that, given a fairly well-dilated cystic duct, we may have stones pass from the hepatic into the cystic duct and into the gallbladder, and they may also pass from the cystic duct into the hepatic duct. Having asserted this opinion, we now mention a case which proves the formation of stones in the hepatic duct. The patient was a woman of 54 years, who had symptoms of biliary disease for several years prior to her first visit to this city for relief from pain and slight jaundice. In this case we found a complete absence of the gallbladder and eight calculi in the ducts. Six of these were in the hepatic and two in the common duct. They weighed 153 grains (12.2 grams).*

We are convinced that Mayo Robson is right in his observation that the hepatic duct becomes dilated after removal of the gallbladder and to some extent assumes its functions. That the hepatic duct is dilated in some cases after cholecystectomy there can be no doubt, for we have had the instructive misfortune to operate a second time in cases where a previous choledolithotomy had not relieved the symptoms. In these cases we have found the dilatation associated with obstruction from calculi.

Stricture of the ducts.—Stricture results from either ulceration from pressure by calculi or is due to malignant disease of the ducts themselves or of adjoining tissues or organs. Pressure of the head of the pancreas often causes obstruction to the exit of bile through the common duct, but this must not be mistaken for stricture. We also call attention to the danger of overlooking

* This case has been reported, *Am. Jour. Med. Sci.*, June, 1908.

obstructive stones in the ampulla of Vater, which has been adequately described by Halsted and others. Should it become necessary to decide between a stricture of the lower end of the common duct and obstruction from stone at that point, or possibly in the ampulla of Vater, we have adopted the practical plan of sounding the duct through an open incision of it, made at some convenient point, through which a sound can be passed into the duodenum. We once undertook to find the papilla in the duodenum which marks the site of the duct, through an incision of the gut, and found one trial a sufficient test of our patience, without definite success until we located the point from above. We have not had a personal experience with stricture of the common duct which has resulted from pressure from stones, or, in other words, which was susceptible of operative treatment. The malignant cases require only some temporary relief, if indeed they can be treated at all. We have been formulating our line of procedure in case of meeting such a complication, and would try some method of anastomosis if the duct was dilated, which would permit the exit of bile into the duodenum. Mayo has once succeeded in making a direct union of the hepatic duct with the duodenum, and we have recently had a case, which was briefly mentioned above, in which the operation was entirely feasible. In this case the hepatic duct was large and the duodenum was close upon it with everything favorable to success if the common duct had been the seat of stricture. Stricture of the cystic duct should require no special comment. Such cases call for cholecystectomy or, if this is inconvenient or impossible, cholecystenterostomy or else simple drainage.

Drainage of the hepatic duct and injury to the lumen of the duct.

—We have been asked the question, "Does the incision of the duct result in stricture during or after closing?" This unfortunate result has been reported by Kerr, who has an immense experience with gallstone operations. One must consider such a possibility when there is excessive traumatism, such as occurs in operations for removal of large calculi from the hepatic duct, as mentioned above. In our early experience we constantly feared the formation of stricture at the drainage point, but fortunately the danger is apparently slight, as we have been unable to find many reports of these cases in the literature. It is, however, always to be considered within the bounds of possibility, and,

should it occur, we should be ready to meet such an emergency by resort to hepatico-duodenostomy, or end-to-end suture. To attempt an anastomosis between the severed ends of the duct, which involves traction upon the point of union, is of doubtful expediency.

Secondary operations.—The changes wrought by infection in the vicinity of the gallbladder are in some respects unusual, and the appearances seen at subsequent operations have been instructive. It may be taken for granted that adhesions between peritoneal surfaces about the liver are not as readily overcome by absorption or maceration as adhesions between those surfaces which have greater freedom of motion, as between coils of ileum; but we know that some very unpromising cases finally recover full and free motion between the gallbladder and nearby organs. Secondary operations are required for the relief of patients who have had rupture of the gallbladder which was treated by drainage only, and it is here that stones are occasionally left for future removal. However difficult we may find such cases, we may take comfort in the knowledge that we usually have a patient in good condition. If it becomes necessary to do a cholecystectomy after a previous rupture with much local infection, we will find it far better to wait for an improved condition of the patient before removing the gallbladder. The improved condition will also do much toward a cure of the results of local inflammatory mischief and we will obtain far better results when the final operation is performed.

Injury to the round ligament.—During a very difficult operation we once tore the falciform ligament from its abdominal attachment and exposed the round ligament for almost its entire length. We were unable to say at first just what had been done, and as the ligament appeared about as long as the common duct it seemed that irretrievable damage had been done to the patient. It was quite impossible to ascertain the nature of the white cord, which looked unfamiliar to us, until we had located the common and hepatic ducts, which was exceedingly difficult under the circumstances. It appears absolutely impossible to be sure of our anatomical landmarks when the ravages of prolonged infection are being untangled, and a great deal of time is necessarily involved in such work.

Fecal fistulae.—In certain cases, which are easily explainable

although very unexpected and very annoying, we may have fecal fistulae result from operations upon the bile ways. Such results of apparently safe and accurate work are always possible, for the reason that patients may have perforation from hidden ulcer of the intestine which was not and could not have been discovered before or at the time of operation. There is also a possibility that we may interfere with the blood supply of a portion of the bowel when a vessel is tied in the mesentery. In a recent case this accident happened to one of our patients when we had not even seen the bowel which was found involved. This perforation appeared in about one week after operation, and but for the presence of a drainage tube our patient would necessarily have died, with the cause of death unsuspected.

Conditions simulating obstruction.—If we find unexpected complications which render known obstructions difficult to overcome, much more embarrassing are those cases where one operates for an apparent obstruction without finding it, and even without finding any cause for the jaundice or cholemia. In one of our cases a man had so-called obstruction for nearly a year. For six months he had been taking a "Carlsbad treatment" in this country. He had been under competent medical care during this time. His symptoms were not well defined, although there had been well-marked jaundice all the time; still he had not had the characteristic symptoms of gallstone colic and the other well-known indications of the passage of a calculus. There was no apparent reason to suspect cancer, for the length of time alone would negative that as a cause of his illness. There was no tumor, and we were unable to assign any reason for the intense jaundice which had resisted the judicious treatment of his physicians. At the operation, which was entirely exploratory, we found complete atrophy of both hepatic and common ducts, with very little change in the size of the liver. It is probable that the liver cells were absolutely disorganized, although without great difference in the actual size of the organ. What caused atrophy of the biliary passages without actual obstruction we failed to learn, as an autopsy was not allowed.

A recent case seems appropriate in this connection. Mr. H., aged 63 years, had been ill for two months with jaundice as his chief symptom. Competent medical treatment having failed to be of benefit, he was handed over for surgical investigation and,

if possible, for relief of his supposed obstruction. He was deeply jaundiced, and had all the associated symptoms and a mass at the seat of the gallbladder which proved to be a dilated gallbladder but not the cause of obstruction. We discovered the absence of bile in both bladder and ducts, with the presence of a large quantity of clear fluid resembling mucus or albumen in the hepatic duct and gallbladder. There was absolutely nothing to do but close the abdomen, for the reason that no cause for the jaundice was found. The hepatic duct was sounded without result, and we were compelled to state that this case, like the former, must have had its origin in some degeneration of the liver cells, perhaps one of the rare forms of cirrhosis. This patient died of cholemia five days after operation.

CASE OF PNEUMOCOCCIC LEPTOMENINGITIS.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

The specimen showed leptomeningitis and dilated ventricles; the pia mater congested and an exudate in the pia-arachnoid, especially of the convexity; the ventricles were dilated and full of turbid fluid.

Microscopical examination and cultures showed that in the exudate were a pseudo-diphtheria bacillus and the pneumococcus; no tubercle nor grippe bacillus.

From a colored man, age 50; never had had diphtheria; had had syphilis; used alcoholic liquors freely. Had pain in chest and in right knee joint, and fever, February 21, 1909; 26th was admitted to Freedmen's Hospital. While in hospital his temperature ranged from 97 to 103; pulse 60 to 80; respirations 25 to 45. Died March 23d.

Necroscopy by Dr. Lamb showed a body not well nourished. Brain as described. Heart 14 ounces; some atheroma of valves; gray miliary tubercles in lungs; some emphysema and fibrosis. Some cirrhosis of liver; gallbladder full of bile. Spleen and pancreas normal. Kidneys large, especially the left; the right also was fatty.

* Reported, with specimen, to the Medical Society, April 21, 1909.

CASE OF STRICTURE OF URETHRA.*

BY H. ATWOOD FOWLER, B. S., M. D.,

Washington, D. C.

The specimen was removed at autopsy from a patient who had presented the following history: A colored man, aged 34, was admitted to the ward at Freedmen's Hospital, April 7, 1909, with a distended bladder. Sunday, April 4th, he had had retention of urine, after successfully voiding on Saturday. Two physicians were called who endeavored for three hours to catheterize him; failing in their efforts, he was sent to Emergency Hospital, where further unsuccessful efforts were made to pass a catheter. He was then sent to Freedmen's Hospital, where again the catheter was vainly tried; he was then put to bed in the ward, the interne gave him a hot rectal injection of coffee and salt solution, after which he voided some urine. On the third day he was brought to the genito-urinary clinic, where a filiform catheter was passed through a stricture in the bulbous urethra; a follower was introduced, and the stricture was dilated up to 24 French. The next day the temperature rose to 100; the second day the temperature was 104; the third day the patient died. The autopsy showed no cause for death except the stricture, and it was concluded that death resulted from septicemia following the urethral traumatism.

This was the only case in his experience in which death followed simple dilatation of the urethra; in this instance it must be remembered that while the operation itself was simple dilatation, there had been several prolonged attempts to introduce metallic instruments through the urethra, resulting in traumatism of the urethra, which could be plainly seen in the specimen.

The special lesson to be learned from this case was that the use of rigid instruments for dilating strictures of the urethra is a dangerous practice and to be avoided; he referred, of course, to tight strictures, permeable with difficulty. When introducing a steel sound, as soon as the point is grasped by a resisting ring anywhere in the urethra all sense of direction is lost by the operator's hand, and it is impossible to know just where the point of the instrument is; under such circumstances the production of a false passage is easy and likely to occur.

* Reported, with specimen, to the Medical Society, April 21, 1909.

Stricture of the urethra is one of the commonest genito-urinary diseases, but the dilatation of strictures is one of the most difficult of minor surgical operations; the use of the flexible *bougie a boule* makes it impossible to do any structural damage, however, and patient, gentle search for the urethral passage with such instruments will usually be attended with success.

Dr. Hagner endorsed Dr. Fowler's remarks upon the use of steel instruments in the treatment of urethral stricture. Genito-urinary surgeons as a rule experience the most difficulty in the treatment of men who have been subjected to repeated attempts at the passage of metallic catheters by unskilled hands. With the proper kind of flexible instruments there are few strictures that may not be successfully passed.

He inquired if the thymus gland had been examined in Dr. Fowler's patient; it is now recognized that individuals with infantile thymus glands stand even trivial surgical operations badly.

Dr. Kober had enjoyed Dr. Fowler's presentation of this case and heartily agreed with him in the plea for the use of flexible instruments in the treatment of urethral stricture. In Dr. Kober's army experience he had had many difficult cases of the kind to treat, and, aside from the possibility of the introduction of infection by brusque methods, he had found that flexible instruments used with great patience were productive of the best results; no untoward after effects remained to embarrass the situation and add danger to the disease.

Dr. Morris inquired if there had been a chill in the course of this patient's illness; the death was attributed to septicemia, but no rigors were mentioned in the report.

Dr. Fowler replied to Dr. Morris that several distinct chills had occurred after the operation. In the treatment of tight strictures Dr. Fowler recommended that, if the urine can be voided at all, instrumentation be delayed until the patient can be kept for twenty-four hours on some urinary antiseptic like urotropin.

SUIT AGAINST THE A. M. A.—We have been notified by the Organic Chemical Manufacturing Company, Philadelphia, that it has brought suit against the American Medical Association in the sum of \$200,000, on account of the unfavorable criticisms of the Council of Pharmacy on the products of the company.

CASE OF KELOID OF THE LABIUM MAJOR.*

By D. PERCY HICKLING, M. D.,

Washington, D. C.

Dr. Hickling said the case and specimen were interesting on account of the rarity of the condition. The patient was a mulatto woman, age 26; she was born with a pendulous tumor springing from the labium major. The tumor had at no time undergone rapid growth, but had increased in size *pari passu* with the patient's growth. The clitoris was partially included in the base of the tumor, and there was a separate tumor attached to the edge of the left labium minor. The patient's general health was good; some years ago she had become pregnant, but aborted at five months, cause unknown. The operation consisted simply of removing the redundant tissue and by plastic work making new labia; recovery was good, healing being primary. Microscopic examination showed that the tumor was a keloid, with some tubercular deposits through it.

CASE OF EPITHELIOMA OF JAW.†

By E. A. BALLOCH, A. M., M. D.,

Washington, D. C.

The specimen is from a colored woman, 55 years old, who entered Freedmen's Hospital, March 24, 1909. Owing to her limited intellectual capacity the history was not satisfactory. As well as could be ascertained, the trouble in the jaw began after the extraction of a wisdom tooth, fifteen years ago. Up to two years ago the growth was slow. At that time the jaw was injured by being struck by a door. After this the growth was more rapid. It never caused pain. The photograph shows the external appearance of the face.

Upon examination, the growth was found to push the tissues of the jaw both inwardly and outwardly: outwardly to the ex-

* Reported to the Medical Society, April 14, 1909.

† Reported, with specimen, to the Medical Society, April 28, 1909.

tent shown in the photograph; inwardly to such an extent that the tongue was crowded against the hard palate and deglutition interfered with. The floor of the mouth was soft and not infiltrated and no enlargement of the cervical glands was detected. The growth was confined to the structures of the lower jaw and involved the entire left side of the mandible and part of the right. The clinical diagnosis was malignant degeneration of a dentigerous cyst.

Operation, March 29, 1909. This consisted in the removal of all the affected tissues and dissection of the neck on both sides. The floor of the mouth was reconstructed as well as possible and the wound closed, with drainage. Healing was aseptic and uneventful. Pathologic diagnosis. Benign epithelioma, of the type described by Krompecher as basal-celled epithelioma.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, April 7, 1909.—The Vice President, Dr. John Van Rensselaer, in the chair; about 60 members present.

The following applicants were elected active members of the Society:

W. C. Borden, George Washington University, 1883.

W. B. Carr, George Washington University, 1907.

William J. French, George Washington University, 1905.

Ralph A. Hamilton, Georgetown University, 1904.

Bernard H. Harrison, Howard University, 1903.

Martha M. Brewer Lyon, Howard University, 1907.

William Malcolm, New York University Medical College, 1891.

William Cabell Moore, University of Virginia, 1902.

George J. Newgarden, Jefferson Medical College, 1889.

Henry Fenno Sawtelle, College Physicians and Surgeons, Chicago, 1902.

William P. M. Sowers, Johns Hopkins University, 1900.

T. J. Sullivan, Georgetown University, 1904.

Robert S. Trimble, National University, 1903.

Invitations were received to attend meetings of the American Society of Tropical Medicine at the Naval Medical School, April 10th; and of the Therapeutic Society of Washington, April 10th.

Dr. A. L. Stavelly read a paper, "Premature Separation of the Normally Situated Placenta." Discussed by Drs. A. F. A. King, T. C. Smith, W. P. Carr, I. S. Stone, A. B. Hooe and G. W. Wood.

Dr. I. S. Stone read a paper, "Some Complications which may occur in the Surgery of the Gallbladder." Discussed by Dr. W. P. Carr. See p. 201.

Wednesday, April 14.—The President, Dr. E. A. Balloch, presided; about 50 members present.

Dr. Hickling reported a case of Tumor of the Labium, with photographs and specimen. See p. 211.

A specimen of *Cerebral Apoplexy* was presented by Dr. D. S. Lamb, who read autopsy notes. The specimen was from a patient of Dr. Duffey's, who gave the history of the case. Discussed by Drs. Chappell, Williams, Hickling and Duffey.

Dr. Duffey said that the patient was a middle-aged woman of a neurasthenic type. He was called to see her on account of acute neuralgic pain in the right temporal region; he prescribed for her and saw her again in the evening, when she was somewhat relieved of the pain. Later she went to sleep, but never wakened to consciousness; next day she could not be aroused; there was no paralysis; the pupils were equal; she was never able to talk, and soon died.

Dr. D. S. Lamb, who made the autopsy, stated that the body was pale but well nourished. The brain showed in the right temporo-occipital region a large cavity with ragged walls, containing bloodclots and communicating both with the lateral ventricle and the surface of the brain; around the margins of the cavity was an abundance of capillary hemorrhages. There were clots in the right middle fossa of the skull. The heart seemed normal; some bloody serum in pericardium. Right lung normal; left lung showed numerous subpleural hemorrhages, and there was much bloody serum in left pleura. Liver rough on under surface; gallbladder full of dark bile. Pancreas normal; spleen small. Several coils of intestine darkly congested. Kidneys showed thinning of cortex; capsules readily removed. Suprarenal capsules normal.

Dr. Williams said that from the location of the extravasation he would have expected the occurrence of Jacksonian seizures, not motor paralysis, because the lesion was far removed from the motor area of the cortex and from the motor paths. Hemianopsia could easily be produced by the lesion; was that symptom present? Also, were there any central symptoms?

Dr. Hickling said that he had had a case somewhat similar to Dr. Duffey's, except that the pressure in the frontal region was exerted by a depressed fracture, not by hemorrhage; the location of the lesion was similar and, like Dr. Duffey's case, there were no localizing symptoms—no motor paralysis, no hemianopsia; the depression was the only guide. When the patient was etherized for the purpose of elevating the depression he had a convulsion limited to the left arm and leg, thus showing that the

pressure was on the right side. The convulsion ceased when anesthesia was more nearly complete.

Dr. Kober read the paper for the evening: "Progress in Sanitation." Discussed by Drs. G. L. Magruder, McPherson, Kin-youn, Chappell, S. S. Adams, Atkinson, Borden and Kober. See p. 168.

Wednesday, April 21.—The President, Dr. Balloch, in the chair; about 60 members present.

The Chair announced that as Dr. G. Lloyd Magruder had signified his inability to serve on the Committee on Revision of the Pharmacopoeia, he had appointed Dr. J. W. Chappell in his place.

Dr. Biscoe requested a ruling of the Chair as to the right of members to smoke during meetings of the Society. The Chair ruled that smoking was out of order, basing the decision on the long-established custom of the Society.

Dr. H. A. Fowler presented a specimen of Stricture of the Urethra, and reported the history of the case from which it had been obtained. Discussed by Drs. D. S. Lamb, Hagner, Kober, Morris and Fowler. See p. 209.

Dr. D. S. Lamb presented specimens as follows: Ileum and Colon with Typhoid Ulcerations; Leptomenigitis. The specimens had been removed at autopsy from cases of Dr. H. P. Parker. Dr. Lamb reported their histories and read autopsy notes. See p. 208.

Case of Typhoid Fever. The specimen was the lower end of the ileum and part of the cecum; showed sloughing ulcers in both, about the end of the second week of the disease. A small ulcer in the appendix.

From a colored woman, age 16; family history good. Was taken sick, January 16, 1909, with severe headache and pain in abdomen, mainly in right hypochondrium; some fever. Admitted to Freedmen's Hospital, January 21st; still had headache and hypochondriac pain; slight cough and expectoration; constipation; appetite poor; she was dull, apathetic; cheeks flushed; pupils dilated; lips dry and covered with scales; tongue much coated, moist, brownish, edges red; sibilant rales over entire front of chest and sonorous rales; some crackling posteriorly at base; heart sounds feeble; pulse small, low tension, regular; much tenderness in right iliac fossa on pressure; Kernig's sign. 22d, she coughed all night; delirium; Widal test positive. 23d, bloody sputa; restless and noisy; dark, watery stool; urine pale, acid, 1010, contained a little albumin; urea and indican decreased; simple squamous epithelium and abundance of leucocytes; uric acid crystals. 25th, involuntary defecation and micturition. 27th, stools bloody; death from hemorrhage from bowels.

21st, temp. 103.8 to 100.5, pulse 95, resp. 29. 22d, temp. 100, 104-101.5; pulse 95-120, resp. 28-35. 23d, temp. 103-

103.5, pulse 100-120, resp. 30-40. 24th, temp. 103.5-102.5, 104; pulse 105-130; resp. 40-45. 25th, temp. 101.5-102, 101.5; pulse 98-115, resp. 35-45. 26th, temp. 100.5-103, pulse 105-135, resp. 35-40.

Necroscopy by Dr. Lamb. Body well nourished. Lungs normal, except some old adhesions of right. Heart normal. Liver pale; gallbladder distended. Spleen large, soft, congested. Ileum, the last four feet showed typhoid ulcers; congestion on peritoneal surface. Similar ulcers and free blood in cecum and appendix. Mesenteric glands enlarged.

Cultures were made from the gallbladder, spleen and glands, showing bacillus typhosus.

The paper for the evening was by Drs. Hagner and Fuller, read by Dr. Hagner. Subject: "The Importance of Early Diagnosis of Genito-urinary Tuberculosis." Discussed by Drs. Fowler, Fuller, Randolph, Behrend, Morris, Brown Miller, Williams, J. D. Thomas and Hagner.

Wednesday, April 28.—Dr. Balloch, the President, in the chair; about 75 members present.

The Corresponding Secretary read a letter from Dr. Harvey W. Wiley expressing appreciation of the resolutions adopted by the Society commendatory of his efforts in the enforcement of the Food and Drugs Act.

The following communication was read from the Secretary of the Washington Academy of Sciences. On motion of Dr. Kober a committee was appointed and the project heartily endorsed. The committee consisted of Drs. I. S. Stone, McLaughlin and Shute.

"WASHINGTON ACADEMY OF SCIENCES,

"WASHINGTON, D. C., *April 28, 1909.*

"Sir:—I have the honor to inform you that the Building Committee of the Washington Academy of Sciences had recently under consideration the question of providing a suitable meeting place for the Academy and the Affiliated Societies, and reported as follows:

"It is very evident to the Committee on Building that if the Capital City is ever to enjoy the advantages of a suitable and dignified meeting place for the various national and local scientific societies we must look elsewhere for accommodations than a building primarily devoted to recreation and social purposes.

"Such an opportunity appears to present itself in connection with the George Washington Memorial Association, whose object is the erection of a Memorial Building to George Washington.

"This Association actually is in existence, has about \$25,000.00 in its treasury and a working capital of \$5,000.00 for the purpose of starting a campaign to raise by popular subscriptions amounts

sufficient not only to erect but also to endow a creditable building. For this purpose the Association will appoint active committees in every State and community.

"The general scope of this laudable undertaking is outlined in the accompanying circular of appeals.

"In the opinion of your Committee the Washington Academy of Sciences can render no more important service to the scientific activities in this country than to strengthen and support the efforts of the George Washington Memorial Association to commemorate in a most fitting manner the interest of our first President in science and higher education in America.

"For this purpose we recommend suitable action by the Academy and the Affiliated Societies so that the popular campaign for funds in the City of Washington may be creditable to the cause and far reaching in its effects."

"In accordance with the above report the Academy, at its meeting of April 24th, passed the following resolutions:

Resolved, That, in the opinion of the Washington Academy of Sciences, the efforts of the George Washington Memorial Association to provide suitable facilities in the City of Washington for bringing together the National Patriotic, Scientific, Educational, Literary and Art Organizations that may need such accommodations, including the Washington Academy of Sciences and its Affiliated Societies, deserves commendation and support.

Resolved, That the Academy considers it eminently desirable that we should commemorate the interest felt by our first President in science and the higher education, and that no better method can be found than to provide, in the city which bears his name, the capital of the nation, a suitable meeting place for all engaged in the advancement of the welfare of the human race.

Resolved, That the Academy appoint a special committee to coöperate in this important movement by all practicable methods.

Resolved, That the Academy recommends to each of the affiliated societies that it appoint a similar committee to coöperate with the committee of the Academy.

"I am instructed by the Academy to request that you will call the attention of your Society to this important matter.

"Very truly yours,

"FRANK BAKER,

"*Corresponding Secretary.*"

Dr. Balloch reported a case of Epithelioma of the Jaw, and presented the specimen. See p. 211.

Dr. H. A. Fowler reported a case of Hypernephroma of the Kidney, and presented the specimen. Discussed by Drs. Hagner, Bovée, Hough and Fowler.

Dr. S. S. Adams read an essay, "A Study of 550 cases of Typhoid Fever in Children." Discussed by Drs. Wall, Roy, F.

Leech, Acker, Hagner, Wellington, Kober, Dudley Morgan, Chappell, Williams and Adams. See p. 196.

Wednesday, May 5.—The President, Dr. Balloch, in the chair; about 70 members present.

The Chair announced the receipt of a call from the President of the Pharmacopoeial Convention for delegates to represent the Society in that convention. On motion, the Chair was authorized to appoint three delegates, and thereupon Drs. Motter, Chappell and Prentiss were named.

Dr. Nichols read the paper for the evening, being a historical sketch of Sydenham. Discussed by Drs. Roy, Dudley Morgan, Wall, Frank Baker, Kober and Nichols. See p. 185.

Wednesday, May 12.—The President, Dr. Balloch, presided; about 50 members present.

The program of the session of the National Association for the Study and Prevention of Tuberculosis was announced and invitation was extended to the members of the Society to attend these meetings.

Dr. D. S. Lamb moved that the Executive Committee be requested to consider the feasibility and desirability of arranging the work of the Society so as to make it conform to the section method in vogue in other cities. The motion was seconded and carried.

Dr. Wells read the paper for the evening. Subject: "Disease of the Ear complicating Measles and Scarlatina." Discussed by Drs. C. W. Richardson, Seibert, McKimmie, Kober and Louis Wilson, the latter being the pathologist at St. Mary's Hospital, Rochester, Minn., associated with the Mayo brothers. Dr. Wilson was introduced by Dr. Kober.

LODGE AND CONTRACT PRACTICE.—The next serious objection to this class of practice is that an inadequate remuneration is invariably provided by those originating the idea, with the expectation that services can be secured at the stipulated "knock-down" price because most physicians have need of the increase of income. The entire proposition, thus fostered, is devoid of good business principles. The servant that is but half paid will give poor service. If a railway or other corporation has such financial or other interest in the health of its employees or patron that it assumes the responsibility of professional service, there is no good reason why it should not pay for the same at the price current in that locality.—*Ohio State Med. Jour.*

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Editorial.

THE HISTORY.—The printing of the History has now reached page 242. There is still an opportunity to furnish biographical sketches and photographs, provided they are sent at an early date. The committee will receive them up to the latest practicable time. Address Dr. D. S. Lamb, 2114 Eighteenth Street, N. W.

COBB BUILDING, SEATTLE, WASHINGTON.—We have been requested to state that this building, which is now under construction at the northwest corner of Fourth Avenue and University Street, Seattle, is designed exclusively for physicians and dentists.

EXCHANGES.

American Journal Surgery.
Annals Gynecology and Pediatrics.
Buffalo Medical Journal.
California State Journal Medicine.
Colorado Medicine.
Cronica Medica Mexicana.
Hygiene, Diet and Longevity.
Interstate Medical Journal.
Journal Kansas Medical Society.
Journal Medical Society New Jersey.
Journal Michigan Medical Society.
Journal Missouri Medical Association.
Journal South Carolina Medical Association.
Louisville Monthly Journal Medicine and Surgery.
Maryland Medical Journal.

Modern Medicine.
Monthly Cyclopedia and Medical Bulletin.
New York State Journal Medicine.
Northwest Medicine.
Old Dominion Medical Journal.
Pacific Medical Journal.
Pathologica Genoa.
Proctologist.
Providence Medical Journal.
School Hygiene.
Texas State Journal Medicine.
Virginia Medical Semi-Monthly.
West Virginia Medical Journal.

PUBLICATIONS RECEIVED.

G. F. Lydston, "Where is the Spirit of '76?"

Quarterly Bulletin Northwestern Med. School, June, 1909.

Schorer, "Vaccine and Serum Therapy," St. Louis, 1909.

See Reviews, *infra*.

W. M. Barton, "Pharmacologic Fetichisms;" "Staphylococcus Cystitis," with report of case; two reprints.

Report of Central Dispensary and Emergency Hospital, Washington, 1907-8.

G. B. Massey, "Conservative Gynecology and Electro-Therapeutics." See Reviews, *infra*.

Hirschmann, "Handbook of Diseases of the Rectum." See Reviews, *infra*.

Mortality Statistics, 1907, N. Y. Bureau of the Census.

J. W. Bovée, "Existing Relations between the General Practitioner of Medicine and the Specialist;" "Suppurative Phlegmonous Gastritis;" "Bilateral Polycystic Degeneration of the Kidneys;" three reprints.

G. T. Vaughan, "Suture of Wounds of the Heart," with report of a second case and a table of 150 operations; "Fracture of Skull;" "Stone, Tuberculosis of the Kidney and Perinephric Abscess;" three reprints.

L. Eliot, "Surgical Treatment of Hemorrhoids;" reprint.

W. A. White, "The Theory of the Complex;" reprint.

G. M. Niles, "Aesthetic Alimentation;" reprint.

J. V. D. Young, "Sacral Suspension of the Uterus;" reprint.

T. A. Williams, "The Trend of the Clinician's Concepts of Hysteria;" "The French Clinics in Neurology and Psychiatry;" "The Rational Treatment of *Tabes Dorsalis* in Relation to its Pathogenesis;" "The Importance for Research and Treatment of Distinguishing Clinical Types Among Psycho-Neuroses;" "The Present Status of Hysteria;" "The Psychological Basis of Inebriety;" The Importance of Modification of the Sensibility in Diagnosis of Disease;" "The more recent Conceptions Regarding Hysteria and their Relation to the Traumatic Neuroses;" "A few Hints from Personal Experience in Psychotherapy, indicated by Physiological Analogies;" "The Differential Diagnosis of Functional from Organic Forms of Motor Disability;" "The Classification of our Concepts Concerning Hysteria;" reprints.

Transactions Amer. Pediatric Society, 1908. See Reviews, *infra*.

W. P. Carr, "Splenectomy," with report of five successful cases; "Surgical Treatment of Epilepsy;" two reprints.

Ninety-second Annual Report of the Friends' Asylum for the Insane, Philadelphia, Pa., 1909.

M. G. Motter and M. J. Wilbert, "Digest of Comments on the U. S. Pharmacopoeia; Bulletin 49, Hygienic Laboratory, U. S. P. H. and M. H. S.

H. H. Harrover, "Study of Urinary Acidity and its Relations;" reprint.

Cornwell, "The Pupil in Extra-Ocular Disease;" reprint.

Medical Miscellany.

Abscess of Liver Treated by Aspiration and Injections of Quinine.—Spencer, in *Jour. Royal Army Med. Corps*, January, 1909, p. 71, reports the cases. They were at the Military Hospital, Millbank, England. The officers had been in India. The treatment was according to Rogers and Wilson (*Brit. Med. Jour.*, June 16, 1906, p. 1397, and October 24, 1908, p. 1248.) All three cases were much benefited and became so much better that they left the hospital.

Effects of Heat During the South African War.—Simpson, of the British Army Medical Corps (*Jour. Royal Army Med. Corps*, March, 1909, pp. 243-262), states that between October 13, 1899, and May 31, 1902, there were 1,625 cases of some form

of heat stroke, with 15 deaths, and 325 soldiers were invalided; 97 cases occurred among the officers. In most cases the cause was a combination of external heat and exertion. The actinic power of the sun as a cause must be only secondary. There were fewer cases in proportion to number of troops in the "seasoned" troops, due apparently to an increased power of resistance, partly dependent, probably, on a readjustment of the regulating mechanisms of the body as occurs in stokers, puddlers and persons employed in similar occupations. As compared with cases in India, the mortality is small and suggests a difference in the type of disease. It should be noted that in South Africa the time between sunset and sunrise is comparatively cool.

The Influence of Cold Storage on Flesh.—Enmet and Grindley, in *Jour. Biol. Chemistry*, Laboratory, Univ. Illinois, May, 1909, p. IX, state that in the case of uncooked beef there was less loss in cooking than in non-cold-storage meat; the cooked meat was juicier; it contained more soluble dry substance and more nitrogenous and non-nitrogenous extractives; richer in soluble inorganic phosphorus; the percentage of total protein was less.

Painful Heels.—Steinhardt, in *N. Y. Med. Jour.*, March 27, 1909, page 626, states that he has seen 30 to 35 cases in the last two years in the Orthopedic service of the New York Hospital, Outpatient Department. The cases appear to have been mainly of gonorrheal or gouty origin; some rheumatic, some traumatic. He details the prophylaxis and treatment.

Noma.—*Boston Med. and Surg. Jour.*, April 15, 1909, page 473. Crandon, Place and Brown report seven cases that occurred in a crowded institution. Their conclusions are that the disease is not proved to be contagious; cases need not be isolated. The microorganisms are *B. fusiformis* and *Spirochaeta gracilis*. The paper is illustrated.

The Use of Alcohol and Other Medicines in the Massachusetts General Hospital.—*Boston Med. and Surg. Jour.*, April 15, 1909, page 480. Cabot says that with practically one-fifth more patients in the hospital for 1907 as compared with 1898, the use of alcoholic liquors in the decade fell from a cost of \$2,322 to \$813, and the cost of other medicines from \$8,424 to \$5,492. The cost of alcohol per patient fell from 46 cents to 13 cents, and of other medicines from \$1.68 to 92 cents. During the decade there had not been any increase in the proportion of surgical cases, but there had been a great increase in the use of hydrotherapeutics, of massage, of mechanical treatment and of psychical treatment.

The Insane and Juries.—Dr. Robt. B. Lamb, Superintendent of the State Hospital for the Criminal Insane at Matteawan, N. Y., has followed up the record of the 34 inmates, who were discharged by juries from that hospital as being sound in mind. His report shows that 14 of these returned eventually either to prison or the asylum; 8 became troublesome to their families; 3 were unable to earn a livelihood; 6 disappeared; 2 committed suicide, and only one was able to even partially support himself after his discharge. The *Jour. Amer. Med. Assn.* comments, May 1, 1909, page 1430.

Tuberculin Tests.—Litterer, *Jour. Amer. Med. Assn.*, May 1, 1909, page 1451, discussing the several preparations of tuberculin and the methods of administration, concludes as follows: The different results obtained by different workers, depend on the use of solutions of varying strengths as well as defective technic in their preparation. There is practically no danger in the conjunctival test if proper technic, proper preparations and proper selection of cases are used. In fewer cases subcutaneous injections are not applicable; the superficial tests can be used without affecting their diagnostic value. In cases in which symptoms are absent but which react to the test we must recognize a danger but not a condition demanding active treatment. There are some signs that may fail but may generally be relied on: A delayed integumental and a negative conjunctiva test usually mean a healed tubercle. Superficial tests indicate tuberculosis. A negative or delayed reaction is a serious sign. A prompt and vigorous reaction is much more favorable as to prognosis. The subcutaneous test is more reliable than the integumental or conjunctival. He advises the use of the three superficial tests, namely, the eye, cutaneous, ointment; he used these on the same patient, at the same time; if any doubt exists as to the interpretation, use the subcutaneous test.

Intestinal Sand; the Banana one of its Sources.—Myer and Cook, in *Amer. Jour. Med. Sci.*, March, 1909, p. 383, claim that the ingestion of the banana can produce intestinal sand.

The X-ray in the Treatment of Deep-Seated Malignant Disease.—Pfahler, in *Amer. Jour. Med. Sci.*, April, 1909, p. 515, discusses this subject and draws the following conclusions: Cases that are operable should be operated on and the operation should be followed by early and thorough x-ray treatment. Sarcomas yield better than carcinomas to x-ray treatment. Of the cases that he reports, 65 per cent. recovered. Localized recurrent carcinoma will usually yield to x-ray treatment unless the mucous membrane is involved. Good results are sometimes obtained,

even in advanced cases of carcinoma; but generally one can hope only for palliation or prolongation of life. Good results will depend very much on good technique.

Means of Promoting the Natural Cure of Cancer.—Handley, in *Brit. Med. Jour.*, March 6, 1909, p. 589, says that the natural local cure of cancer is brought about by fibrotic processes which cut off the cancerous epithelium from that contact with connective cells which is necessary to maintain its fatality. Superficially, at any rate, this process presents some analogy with the natural cure of tubercle, which also takes place by a process of fibrosis. The open-air treatment that has been so successful in tubercle may be worthy of trial in the more chronic cases of inoperable cancer. The cancer patient would probably require less food and more exercise than the tuberculous patient.

Reviews.

CONSERVATIVE GYNECOLOGY AND ELECTRO-THERAPEUTICS. G. BETTON MASSEY, M. D. 462 pages, illustrated. F. A. DAVIS CO., Phila. \$4.00 net.

The major part of this volume is devoted to the treatment of gynecologic diseases by electricity. The apparatus employed is described in a clear manner and amply illustrated. There is a brief résumé of the theory of electricity in its relation to medicine. Massey does not claim that the treatment is a panacea for all the affections peculiar to women, and lays down rules for the use of electricity. It is doubtful, however, if the average gynecologist would accept this method in lieu of the operative procedure in fibroid of the uterus; yet Massey presents a table of these cases in which he shows 75 per cent. cures, and the case histories of several, in which a tumor that extended above the umbilicus was reduced and cured by electrical methods. Likewise, his attitude in regard to extrauterine pregnancy will not meet with the approval of the majority of surgeons. Referring to tubal pregnancy, he says that there is "no reason whatever why complete absorption should not follow electric feticide permitting the tube even, and surely the ovary, to be subsequently brought into a healthy condition under vaginal application." Chapters are devoted to cancer of the breast, uterus and rectum, displacements of pelvic viscera, sterility, etc. A chapter on the x-ray seems to have no place in a book of this nature, and is incompletely written. It is questionable if the title, "Conservative Gynecology," as distinguished from operative gynecology, is well chosen. The paper, type, illustrations and binding are good.—C. S. W.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY, TWENTIETH SESSION. Edited by L. E. LAFETRA, M. D. E. B. TREAT & Co., N. Y.

The address of the President, Dr. Charles Gilmore Kerley, deals with public school education. He decries the lack of education in its relation to manual labor, and says that the public school fails in its function in this particular.

A symposium on the Antimeningitis Serum has the following contributions: "An Analysis of Four Hundred Cases of Epidemic Meningitis Treated with the Antimeningitis Serum," Simon Flexner and Jas. W. Jobling. "Serum Treatment of Meningococcic Meningitis," Frank S. Churchill. "Serum Treatment of Epidemic Cerebro-Spinal Meningitis, Based on a Series of Forty Consecutive Cases," Charles Hunter Dunn. "Hydrocephalus of Meningococcus Origin, with a Summary of Recent Cases of Meningitis Treated by Antimeningococcus Serum," J. H. Mason Knox and Frank J. Sladen. "Serum Treatment and the Prognosis Under Various Forms of Therapy, of Cerebro-Spinal Fever," Henry Koplik. S. S. Adams reports a very interesting case of Spasmodic Stricture of the Esophagus in an infant of six months. The case terminated fatally about fifteen months later from broncho-pneumonia. A perforation of the esophagus was found at autopsy.

Holt reports 1,000 tuberculin tests, and concludes that while the positive reaction suggests the probability of tuberculosis, they do not differentiate between the latent and active conditions. The tests must be taken in connection with the general symptoms and physical signs, but, taken apart, may be misleading.

Other contributors to this excellent volume are Thos. S. Southworth, Thos. Rotch, W. P. Northrup, H. D. Chapin, A. Caille, J. L. Morse, I. A. Abt.—C. S. W.

HANDBOOK OF DISEASES OF THE RECTUM. By HIRSCHMANN. Pp. 362. C. V. MOSBY Co., St. Louis, Mo.

This is a very satisfactory manual of rectal diseases. Without claiming to be an exhaustive treatise, the various subjects of which it treats are described in a clear, readable and succinct manner, and the views of the author, especially as to treatment, are sound and practical.

The work is all the more valuable in that its recommendations are based, evidently, on the author's personal experience, the only exceptions being the chapters on Amebic Dysentery and on The Feces and their Clinical Examination, which are by Dr. John L. Jelks and Dr. George W. Wagner, respectively, and which add to the merit of the book.

Noteworthy features of the work are the extent to which local anesthesia by the use of weak solutions is recommended in the treatment of rectal diseases, and the surprising variety of these

ailments which can be satisfactorily managed in the office of the surgeon.

The book is well printed and profusely illustrated with good cuts, which supplement the text.

It can confidently be recommended as a safe guide to the examination, diagnosis and treatment of the diseases of the rectum and sigmoid. It should be especially useful to the general practitioner, as non-surgical methods of treatment are given full credit and consideration.—EDWARD A. BALLOCH.

WASHINGTON MEDICAL ANNALS

INSANITY ; THE HOME TREATMENT OF THE PATIENT.*

By PRESLEY C. HUNT, M. D.,

Washington, D. C.

The erroneous belief that insanity and unsound mind are one is still prevalent. In insanity, while disorder of the mind exists, yet it is not the most important feature. The most prominent feature in insanity is disorder of conduct by which the disorder of the mind is expressed and made known. We form our judgment of a person's sanity or insanity largely by his actions. Disorder of the mind can never be distinctly observed. No practical definition of insanity has been formulated, owing largely to our incomplete knowledge of the disease. Every alienist has a more or less complex definition which he offers when a definition is required. One of the least objectionable definitions is that of Dr. Wm. A. White: "Insanity is a disorder of the mind due to disease of the brain, manifesting itself by a more or less prolonged departure from the individual's usual manner of thinking, feeling and acting, and resulting in a lessened capacity for adaptation to the environment." The peculiar and proper function of the highest regions of the brain is the relation of the individual to his environment; one part of this function is to receive from the world impressions which so act on the brain that the mind gains information of what is going on in the world; the second part is the action of the mind causing bodily movements adapted to the state known through the medium of the senses; and a further function is the governing of the regions of the body.

*Read before the Medical Society, May 19, 1909.

It appears from the above that the highest regions of the brain are primarily disordered in insanity, and that the principal function of these regions is to determine and actuate conduct, also that the bodily functions will be likewise more or less deranged. It therefore may be stated that the symptoms of insanity are threefold : 1. Disorders of conduct ; 2. Disorders of bodily function ; 3. Disorders of mind. That all these symptoms are present in every case of insanity, although each class of disorders is not equally prominent, goes without saying.

In a general way the symptoms of the several forms of insanity are more or less constant. With certain delusions we often have certain defects in the movements of the pupil of the eye, alteration of speech and gait ; with another class a tendency to homicide ; with another class a tendency to suicide. Epileptic convulsions so slight in nature as to escape observation may be followed by "post-epileptic automatism." Acts in this state are termed automatic; that is to say, they are acts that from constant use are performed with a minimum of deliberation, attention and volition, the peculiarity being that they almost always differ from normal acts in their lack of direction and purpose. The condition may be disguised by the habitual nature of the act and its unintelligent character; that is, a clerk will pick up any object resembling a pen and go through the motion of writing ; if he happens to pick up a pencil, and paper is lying on the table, he will cover the paper with unintelligible figures.

Disorders of conduct that characterize insanity are most diverse ; they may be crude acts or simple means that obtain the object of their desire, or elaborate acts which seek indirectly through a connected series of events the desired end. The acts are an index to the intelligence of the person. Conduct, if disordered, is excessive or defective in extent. It is always disturbed in insanity, usually a combination of defect and excess. It is more marked in the more elaborate acts which are first and most affected and they are the last to return to the normal on recovery.

Mind is an incident in and a means towards the achievement by man of his purpose. Man is ever striving to gain his end. His conduct proceeds, his acts are performed, in order to accomplish his desire. Desire is the motive power of all conduct. When motion is received we experience the mental state sensation. When motion is emitted we have the mental state of

volition. The intermediate stage, in which the motion received is thus rearranged, redistributed and reinforced, we call thinking. Memory is the final resulting mental state.

The home treatment of patients is only applicable among the well-to-do. If the family is able to bear the expense of treatment, any case of insanity may be cared for at home. The poor patient, on the other hand, suffering from an acute psychosis, should be placed without unnecessary delay in an institution especially devoted to the care and treatment of this group of cases.

The methods employed in the home treatment will be stated, and while necessarily only a brief superficial account is given, still it is hoped that this may prove of value in bringing to the attention of the Society what it is now possible to accomplish.

In acute insanity the treatment resolves itself into rest in bed, overfeeding, wet pack, fresh air and the occasional use of drugs, as may be indicated. The patient should be put to bed at once. Remove all sharp instruments, weapons, drugs, cords, door-keys, etc.; have the windows so arranged that they may not be opened over six inches. The bed treatment impresses the patient with the fact that he is ill, and by further impressing the fact that the illness is curable, and by not occupying the patient's mind with games, odd jobs, etc., in fact by doing nothing to interest the patient, but by treating the disease as an ordinary illness, we obtain both physical and mental rest, and the result is a more frequent and speedy recovery. If motor excitement be present, it may require the temporary use of drugs, but it is much better for the patient to resort at once, if possible, to hydrotherapy. Hydrotherapy applies to the external as well as the internal use of water in the treatment of disease. This method may be conveniently carried out in private houses with modern plumbing.

The warm bath produces diaphoresis, influences the circulation, lowers the blood pressure, causes the elimination of morbid products, renders the surface of the body less sensitive and produces a sedative action. The cold bath should be used only in cases that respond to the severe shock produced by the application of cold water to a large surface of the body, and it should be followed by energetic rubbing. It increases the nervous energy, stimulates the functions of the body and raises the blood pressure. The spray, either warm or cold, should follow the bath in suit-

able cases, for about five minutes. It is produced by a nozzle attached to a rubber tube which is connected with the spigot.

The wet pack is very useful in excited cases, as well as in insomnia. Wet a linen sheet in water and completely wrap the patient, leaving only head and face exposed. Over the sheet wrap one or more blankets. The wet pack may be used either cold or hot, as the condition of the patient warrants, and may be continued from twenty minutes to several hours. The wet pack also proves a good temporary restraint for excited cases.

The use of hydrotherapy in no way interferes with the medical treatment. The hot-air box may be easily improvised if needed. Insomnia is almost a constant feature of the acute forms of insanity. Drugs should be used only when indicated. Two drachms of paraldehyde, night and morning, quiets the excitement of young patients and produces sleep. Bromides are valuable, but their almost universal use in mental diseases is to be strongly condemned. Sulphonal, trional and veronal are contraindicated in acute depressed conditions. Sulphonal is almost a specific in acute mania, 30 gr. for a man and 20 gr. for a woman, every night. Massage and gentle faradism are useful aids to nutrition. The insane require stronger and larger doses of purgatives, or the enemata should be more copious than for constipation in the sane.

- The treatment of paresis is systematic. At the present day
- three methods are undergoing trial: 1. Urotropine, 10 grains three times a day. 2. The French school inject daily into the muscular tissue some form of mercury. 3. Dr. Ford Robertson prepares and uses an antiparalytic serum.

Overfeeding is necessary to restore the great waste of tissue going on in the system. The nurse should be instructed in acute cases to feed the patient every three hours, keeping a detailed account of the quantity of food taken. The food should be easily digested—milk, eggs, meat juice, etc. The need for a nurse trained in the care of the insane is of primary importance, and in this connection the Government Hospital for the Insane turns out annually from its training school a corps of men and women well qualified to aid the physician in the arduous duty of caring for these patients.

As auto-intoxication is a frequent factor in the etiology of insanity, the alimentary canal should receive prompt and careful

attention, the result at times of such attention being most gratifying.

There is much diversity of opinion in regard to the value of psychotherapy. The benefit is good in selected cases, especially after the acute stage of the insanity has passed. The personal factor of the physician enters largely into the results obtained. The cardinal point in the management of the insane is never to deceive them. Be absolutely truthful in every statement made.

Suicidal patients are to be watched night and day. While suicide is most common among melancholiacs, yet patients suffering from other forms of insanity often attempt suicide.

An instructive case is as follows: A widow aged forty-five believed that one of the leading lawyers of this jurisdiction had plotted with others to deprive her of property after several years of litigation in which she decided that her lawyers and presiding judges were her enemies. She stated that she would take the law into her own hands, but instead of attempting to harm her arch enemy, the lawyer, she nearly accomplished the purpose of destroying herself by illuminating gas.

Refusal of food may be overcome by the watchful and persevering nurse. Spoon feeding may be resorted to, but the pouring of fluid nourishment down the patient's throat with the feeding cup is not to be tolerated. Patients may often be fed after a hypodermic of hyoscin. Nutritive enemata may be given. When ordinary means fail the stomach or nasal tube should be used. In violence and destructiveness the use of the hot wet pack or hypodermics is indicated. In convalescence, if the patient is not taking the rest cure, occupation of some kind is necessary. Out-of-door work is best. Garden work keeps the attention on what is being done, the flow of ideas is checked and the mind is prevented from dwelling on illusions, hallucinations or delusions. For indoor work, ordinary housework, knitting, sewing, carpentry, etc., may be resorted to.

In concluding this paper I wish to emphasize strongly the fact that during acute insanity certain changes in the cortical cells, which lead to a chronic state of insanity, occur, and therefore the prognosis of insanity, like any other disease, is more favorable the earlier the disease is recognized and treatment begun.

Dr. Wm. A. White understood that the paper was intended as a plea for the management of many cases of insanity at home. On this account especially he was glad to hear the paper, because the alienist has become too largely regarded as a man whose function is to pronounce patients insane and forthwith advise that they be committed to some institution. The old idea in the treatment of insanity, and the same exists to a great extent at present, was to get the patient out of his habitual environment; but this in many cases is not necessary, for example in the septic, infectious deliria, in which the patient ought to be kept at home, provided, of course, that in violent cases he and everybody else can be properly safeguarded. On the other hand, cases which do need a change of environment must be sent to some institution, unless the patient happens to be rich enough to surround himself with a private institution of his own. Especially is this change of surroundings necessary in those cases in which the particular delusion involved bears in some way upon matters connected with the home or family. In this connection Dr. White cited two cases, rather similar in most particulars, but contrasted in that one did well at home, the other reacted badly and had to be taken to an institution.

Very many insanities can be well managed at home and should be treated there, and he hoped the paper would leave a strong impression upon the profession in general that insanity and institutions do not inevitably follow one upon the other, and that the alienist may have a wide field of usefulness outside the walls of the asylum.

Dr. DeWeese said that Dr. White's remarks seemed to cover most of the points inviting comment. His own experience with excited cases which have come to his sanatorium after a period of treatment at home has been that the greatest difficulty arises from the too liberal use of hypnotics. The after-care at home after treatment in institutions is of great importance and should receive very careful attention.

Dr. T. A. Williams corroborated Dr. DeWeese's remarks upon the too liberal use of narcotics in the treatment of the insane by the general practitioner. Narcotics should not be given at all until the diagnosis has been established, for the same reason that the surgeon will not give narcotics until the diagnosis has been made—the drugs masking the true symptoms of the patient's state.

As to the paper, in the introduction it was said that insanity is a distinct disease entity, separate from other diseases and with physical manifestations: as a matter of fact, do not many other diseases cause insanity? Also, are there not many insane persons in the best physical health?

As to the home treatment of the insane, it is a proper and pious wish to keep these patients at home; but in so many cases

the maladjustments in the home are so great that removal is absolutely necessary.

The statement that the home treatment of insanity can be conducted by the use of hydrotherapy, feeding and rest requires some qualification, because nice discrimination in the use of these measures, acquired by large experience, is necessary to apply them effectually. Moreover, in some cases of insanity in which adjustment is at fault, rest is contraindicated.

In his opinion it is not necessary to have a special personality to apply psychotherapy successfully; otherwise it would be of very limited availability. What is necessary is a special study of the principles involved and special training in the application of them.

The great secret of the successful treatment of insanity in any case is early and accurate diagnosis.

Dr. Hickling expressed his appreciation of the paper. In the introduction the essayist had failed to lay stress upon language as a manifestation of insanity; conduct was mentioned, but, while usually connected, language may be independent of conduct.

The question of treatment is always interesting; there have been radical changes since the old days of isolation in chains; happily past are the days of the locked cell and neglect; happily past also are the days of narcosis. At the present time treatment is more rational, humane and successful.

The diagnosis of insanity and removal to an institution, as the essayist had said, should not inevitably follow. While the home treatment may be very expensive, still it is often of the greatest usefulness and is frequently desirable and applicable.

The question whether rest or occupation shall be prescribed depends upon the case in hand. Surely rest and overfeeding in most cases are powerful means for good. Hydrotherapy is now possible in almost any home. He suggested, as a modification in the administration of the warm pack, the omission of the hot wet blanket next to the skin, this method often being weakening; as a substitute for the blanket he uses a sheet wrung out of hot water next to the skin, dry blankets being wrapped about the patient outside the sheet. The sedative effect of the pack will be obtained by this method and at the same time some stimulation of the heart and improvement of the circulation.

Elimination in all cases should be encouraged through every emunctory.

He agreed with Dr. DeWeese in the importance of the "return treatment." If the return to the home from the institution could be made under favorable circumstances, both as to medical care and as to attitude of family, many cases could be sent home much earlier, thus saving expense and at times expediting the cure.

He took exception to the statement that psychotherapy could be utilized by any physician; the successful application of this

subtle influence must require special individual traits and much careful preparation.

In his opinion manic depressive states and some cases of dementia praecox do better at home than in an institution.

Dr. Randolph asked Dr. Hunt what he meant by the expression "overfeeding;" did not Dr. Hunt really mean "forced feeding." Dr. Randolph had long felt convinced of the harmfulness of injudicious feeding to the extent of advising or requiring the ingestion of more food than the organism was in need of or was capable of successfully carrying through the necessary metabolic processes. He was interested in the prevalence of the milk and raw-egg fetish, and had read a paper some time ago in which he had sought to explode the idea. He had been gratified to see a paper by a New York physician recently in which the same convictions were expressed.

Dr. Hunt expressed his thanks for the generous discussion of his paper. He thanked Dr. Randolph for insisting on the correct expression "forced feeding," instead of "overfeeding." Insanity being simply a disease, as in other diseases, there may be great bodily waste; the amount of food administered must be enough to balance the daily waste and go just beyond. Dr. Hickling deserved great credit for his work in the neurological department at Providence Hospital, where he successfully uses the methods roughly described in the paper.

Dr. Hunt himself uses the wet hot sheet instead of the blanket for the administration of packs; Dr. Hickling probably had not heard that part of the paper in which the administration of the pack was described.

Dr. Hunt thought that Dr. Williams was wrong in including idiots and imbeciles among the insane, to fortify the opinion that insanity may be compatible with good physical health; idiots and imbeciles are not insane. If Dr. Williams were as erudite in the realms of psychiatry as he is in neurology, he would know that in 80 per cent. of the insane there is some actual bodily disease.

NORTHWEST MEDICINE.—It is reported that this journal is to be the official organ not only of the Washington State Medical Association, which it has been for some time, but also of the Oregon State Medical Association; and it is expected that the Idaho State Medical Association, and it is hoped that the British Columbia Medical Association, will have the same relation to the journal. The name of the journal will not be changed, and it will represent what may be called the Pacific Northwest.

DISEASES OF THE EAR, COMPLICATING MEASLES
AND SCARLATINA.*

By WALTER A. WELLS, M. D.

Washington, D. C.

[ABSTRACT.]

That measles and scarlatina are responsible for a very large proportion of all ear troubles, and especially of chronic discharging ears, is proved by an abundance of statistical evidence. About 12 per cent. of all cases of suppurative otitis originate with scarlatina; about 5 per cent. with measles.

These cases include the worst degrees of deafness, and it is shown by the report of the Deaf and Dumb by the Census Bureau that of total deafness (of which about three-fourths were deaf-mutes) 11 per cent. are attributable to scarlatina and 2½ per cent. to measles.

Two kinds of otitis are observed in the course of measles. One is to be regarded as an exanthematous manifestation, occurs within the first three days, is symptomless in its course, and will arise and progress without its presence being suspected. It is very common, but fortunately benign in its consequences. The other form, which occurs in the second or third week, is apt to be attended with secondary infection and often assumes a very malignant type. This, like the other variety, may be insidious in its course. A case is reported in which a fatal intracranial complication occurred in a man four or five weeks after the attack, and who in the meantime had been going about and presented no symptoms of aural disease, no pain or tenderness, and no discharge until the day before death. Another case is reported in which the aural complication developed late in the disease, and in which there was rapid bone destruction. Mastoid operation was required; the patient recovered.

Otitis complicating scarlatina assumes three types: (1) acute serous; (2) acute suppurative; (3) gangrenous.

Secondary infection, above all the streptococcus organism, is responsible for the virulent character of certain cases. Mastoiditis is a frequent complication, and two cases are detailed in which the mastoid operation had to be performed, and illustrating some

* Read before the Medical Society, May 12, 1909.

of the peculiarities manifested in such instances. One case was marked by the recrudescence of the mastoid inflammation several weeks after it had apparently subsided.

Another case was an example of the extensive osseous structures sometimes found upon the operating table in these cases, when beforehand there was no reason to suspect them. The patient was a girl of 14, who had the attack of scarlatina two months previously. On the side affected there had been a chronic ear discharge, lighted up by the attack. The entire mastoid apophysis, including the tip, was necrotic; the disease involved a considerable portion of the parietal bone, and the lateral sinus of the brain had to be uncovered over a considerable distance; this in spite of very doubtful tenderness before operating.

In both measles and scarlatina, a characteristic feature is the resistance of the drum-head and the frequent absence of any aural discharge. A most careful watch, therefore, in both diseases should be made for the slightest symptom pointing to ear disease. A slight elevation of temperature not to be otherwise accounted for should excite alarm, as should also a sudden increase of deafness, the presence of tenderness in the auricle, or the observation that the little patient always sleeps upon one side.

The lymphatic temperament, especially the presence of adenoid vegetations in the naso-pharynx, greatly increases the liability to aural complications in the two diseases in question and seriously increases their gravity.

Of secondary infections the streptococcus is most to be dreaded.

Local treatment of the nose and throat may be of great value in preventing aural trouble; industrious local treatment may avert surgical measures, but the latter may be indicated eventually, both to save the patient's hearing and his life.

Dr. C. W. Richardson regretted not having heard the early part of the paper. The subject, no doubt, had been inspired by the unusually noteworthy incidence of otitis during the epidemic of measles and scarlet fever during the previous winter.

A few authorities have asserted that in all cases of these two diseases coming to autopsy, purulent or sero-purulent exudate may be found in the middle ear. He thought this statement entirely too radical; there are too many cases in which no ear symptoms whatever can be noticed.

Whenever in measles any symptoms whatever of otitis develop

immediate paracentesis is indicated. Most of the cases in his hands in which this procedure was carried out escaped mastoiditis, or if mastoiditis had already set in, there was no further extension after the incision of the drum-head was made. In one child both ears were involved; one was allowed to rupture and the mastoid cells became involved; the other was incised by him and there was no extension of the process.

In scarlet fever paracentesis is not so efficacious; the adnexa are invaded very early and extension is more likely.

He urged the importance of very early operation upon infected mastoid cells for conservative reasons.

He confirmed Dr. Wells' observation of the frequent late occurrence of mastoiditis after complete recovery from the exanthem.

He spoke of the great difficulty of recognizing involvement of the sinus in cases of mastoid abscess, and reported two contrasted cases to illustrate this point.

Dr. Seibert regarded Dr. Wells' paper as very valuable. It should be especially appreciated because the laity, and even the profession, do not appreciate the gravity of measles, there being so many grave sequelae, especially those involving the ears. Dr. Seibert reported a case of mastoiditis recently in his hands, the sequel of an attack of measles two months before. Although this patient was promptly operated upon, there was intracranial involvement, and at the autopsy thrombosis of both cavernous sinuses was found.

Dr. McKimmie said that in the paper and discussion some very important points had been brought out. The difficulties attending diagnosis had been properly emphasized; he had seen the case reported by Dr. Seibert, the interpretation of the phenomena presented being of unusual difficulty.

With reference to treatment Dr. McKimmie desired to utter a note of warning against the too prevalent use of the ice bag. He believed the prolonged application of the ice bag to be irrational treatment, on the ground that it diminishes the blood supply and thus defeats nature's defensive processes, and it so obtunds the pain as to give a false sense of security.

He agreed that paracentesis is required very early, but he believed that the mastoid cells are often infected coincidently with the middle ear, in which case paracentesis will not prevent mastoiditis.

In the recent epidemic his experience had been that, while the measles was usually of a mild type, the ear complications were unusually frequent and severe.

He pointed out that intracranial complications may follow middle-ear disease without mastoid involvement. As to the diagnosis of these allied affections, leucocytosis could not be de-

pended upon because it may be absent in the presence of disease in grave form.

Dr. Kober seconded the plea of Dr. Wells for greater efforts to prevent ear infections in scarlatina. Medical antisepsis here plays an important rôle, and the rational use of antiseptic treatment for the naso-pharyngeal inflammations is of the utmost importance. Dr. Kober called attention to Lipman's paper upon otitic infections, in which the value of the ligation of the external jugular vein for the prevention of extension of infection was demonstrated; Dr. Kober regarded this paper as one of great practical importance. He introduced Dr. Louis Wilson, of Rochester, Minn.

Dr. Louis Wilson expressed his thanks for the privilege of attending the meeting of the Society. Referring to Dr. Kober's remarks upon the work of Lipman, Dr. Wilson said that Dr. Lipman's paper was a continuation of one presented upon the same subject last year. Recognizing, as we all do, the streptococcic nature of the exanthemata, Lipman says that after the subsidence of acute symptoms if any streptococci can be found in the blood, following any symptoms whatever of local ear infection, sinus thrombosis is indicated. In five cases at the clinic at St. Mary's Hospital streptococci were found in the blood, and in all, thrombi were found in the sinuses. Certainly Lipman's thesis seems to be well substantiated in very many instances.

Dr. Wells had nothing to add to what had been said in his paper. He had been led to present it because of the recent great prevalence of aural complications in measles, and also because of having seen a fatal case of aural infection follow a perfectly featureless and mild attack of measles. It seemed proper to bring the subject again to the attention of the general practitioner because of the frequency with which aural disease may develop with slight or absent symptoms.

The cases cited by those who had taken part in the discussion were interesting and illuminating. He agreed with Dr. Richardson as to the value of early paracentesis and with Dr. Kober upon the importance of medical antisepsis. As to the use of the ice bag, he was not ready to agree entirely with Dr. McKimmie. Certainly it can do no good after suppuration has begun, but if only hyperaemia is present it may be beneficial, though it should be stopped unless early and decided amelioration of the process is obtained.

He appreciated the value of Lipman's work and had been interested in Dr. Wilson's presentation of it.

DR. GEORGE C. BURTON, of this Society, died July 22d, of apoplexy, at Mitchell, Indiana.

THE PROGNOSIS AND DIETETIC MANAGEMENT
OF DIABETES MELLITUS.*

BY HENRY D. FRY, M. D.,

Washington, D. C.

Dr. Fry said that the subject was of increasing interest and importance because of the increasing frequency of the disease and of the bearing that its early recognition has upon the outcome. With respect to the increasing frequency, he presented a chart compiled from statistics of the Census Bureau which indicated a steady annual increase in mortality from diabetes in the registration district of the United States. The same increase has also been noted in European countries. A study of these statistics reveals the fact that, contrary to general expectation, the largest mortality rate from this disease per 100,000 inhabitants was in the rural districts of New England. The lowest death rate per 100,000 was in the rural districts of Maryland, North Dakota and Colorado. In 1907 the decade of life showing the largest mortality was from 60 to 70. In 1907 also there were six deaths from diabetes mellitus in infants under one year of age; there were sixty-four deaths in children under five years.

The prevention of this disease is a problem far from solved, and it probably will be so until we know more about its causes. Why is it so seldom seen among the negroes? Why so frequent among the Jews? Why so frequent in certain rural districts, and, on the other hand, in certain States, why is it an urban disease? It is a disease of theories, but there is one practical preventive measure which may be relied upon: namely, the early detection and treatment of glycosuria. The trouble with this measure is that the patient seldom consults a physician until there are very patent symptoms, until diabetes is actually established. But what happened in these cases six months earlier? Most likely there was a simple glycosuria, entirely symptomless. What if this glycosuria had been discovered, as in an examination for life insurance or for an operation? Here is where the patient and the physician alike have a chance. Dr. Fry quoted the cases of a man and a woman in both of whose urines sugar was accidentally discovered; dietetic treatment of these two per-

* Read before the Medical Society, May 26, 1909.

sons resulted in complete and permanent disappearance of the glycosuria. The early and radical treatment of glycosuria is the important step, because otherwise this functional derangement is apt to go on to diabetes.

He counselled the systematic periodical examination of the urine of all middle-aged persons, with special watchfulness over members of families in which a tendency to diabetes exists. Where glycosuria has once been detected, in such cases there should ever be watchful care of the diet, so that the limit of carbohydrate tolerance may not be exceeded.

With respect to the prognosis it may be said that the appearance of the disease at an early age is uniformly of bad omen; von Noorden stated that he had seen only one child recover. Conversely, the prognosis improves with advance in years. Other prognostic criteria are: (1) the general condition of the patient—weight, color, etc.; (2) has the disease advanced to the point of causing visceral destructive lesions; (3) the quantity of sugar present in the urine; (4) the occurrence of acetone.

In using the quantity of sugar as a prognostic criterion it is first necessary to determine the quantity passed when the patient is on a carbohydrate diet; then the patient having been placed upon von Noorden's pure vegetable diet, if the sugar persists or is not very materially diminished after five or six days, the prognosis may be pronounced bad, because it has been demonstrated that the organism is converting its own tissues into sugar—the diabetic habit has been firmly established.

If the sugar entirely disappears, then the prognosis becomes much brighter, the degree of brightness depending upon the determination of the carbohydrate tolerance. The degree of carbohydrate tolerance is established by adding to the vegetable diet increasing known quantities of bread until sugar makes its appearance in the urine. The greater the tolerance to starch of course the better the prognosis, everything else being equal. After this prognostic information about the patient has been obtained the dietetic management largely depends upon it also, because it should be the object in arranging the dietary to allow as much carbohydrate as possible and still remain below the danger line.

It is a mistaken notion that the elimination of carbohydrates from the diet is dangerous; it should be done rather gradually, of course, and there should be added sufficient heat-producing fats.

At von Noorden's clinic the following diets are prescribed :

(a) *Vegetable* diet, consisting of five meals a day of green vegetables, with the yolk of eggs and bacon. This diet is given when it is desired to eliminate all sugar from the urine, and bread is added to it to estimate the carbohydrate tolerance.

(b) *Strict* diet, consisting of green vegetables, fat meats, eggs, and other fats, as butter, olive oil, etc. This diet is prescribed when the sugar does not entirely disappear under the vegetable diet.

(c) *Regular* diet, the same as *Strict* but with carbohydrates added to the point of tolerance.

(d) *Oatmeal* diet, consisting of one-half pound of oats a day, with eggs, cream, butter, etc. This last is given in bad cases, those with acetone—cases on the verge of coma.

For the best treatment of this disease the patients should be under hospital control; otherwise the diet cannot be strict. With the best intentions patients cannot recognize the danger of the sugar in a sauce or the flour in a gravy; nor, on the other hand, can a cook be prevented from using them. Whether in or out of a hospital these patients should have their urines examined very frequently so as to know their exact state. In many cases a hospital sojourn of six months or a year, preferably in an institution devoted to the care of diabetics, will be highly beneficial. If the increase in the prevalence of the disease continues, the diabetic hospital must come for the care of rich and poor alike. That, in Dr. Fry's opinion, will be the future line of treatment.

Dr. Lochboehler said that Dr. Fry's address had been most interesting and enjoyable. Dr. Lochboehler was sorry that the question of diagnosis had not been dwelt upon. There are so many points which may be misleading; so many patients have vague aches and pains, loss of weight, asthenia and other symptoms which cause the physician to fail in the recognition of the disease until the examination of the urine reveals the presence of sugar.

CEREBRO-SPINAL MENINGITIS.—A son of Governor Hughes, of New York, student at Brown University, has passed through an attack of this disease, which had a severe onset, was treated with Flexner serum, and at last report was convalescent.

CASE OF ARTHRODESIS FOR FLAIL-FOOT.*

By A. R. SHANDS, M. D.,

Washington, D. C.

Dr. Shands presented a patient to show the strikingly good results obtained by the application of a somewhat rare operation, arthrodesis, in the treatment of certain paralytic conditions. The little girl was the victim of acute anterior poliomyelitis, both feet having been paralyzed; one remained completely useless and was a source of annoyance on account of its extreme flexibility—such as to make the term dangle-foot or flail-foot applicable. The operation of arthrodesis was done, after the method of Whitney. It consisted simply in opening the joint and denuding the articular surfaces—in this case those of the astragalus and the bones of the leg; the result was, of course, a beneficent ankylosis. The improvement in the little girl's locomotion was very marked.

SPECIMENS OF URINARY CALCULI.*

By H. A. FOWLER, B. S., M. D.,

Washington, D. C.

Dr. Fowler presented a number of urinary calculi, some on account of their oddity of shape or formation, others on account of items of interest in the history of the patients from whom they were removed.

The first calculus was removed from a young man who eight years before fell down an elevator shaft, and suffered an injury to his pelvis; during the consequent illness a perineal section was done because of some retention of urine or other bladder disability. One year later symptoms of vesical stone developed; treatment was given without relief, and an operation was advised but refused; since which he had endured incontinence, great pain and all the other discomforts attending such a condition. Examination by Dr. Fowler revealed a large mass just posterior

* Presented to the Medical Society, May 26, 1909.

to the scrotum; the pubic bone was depressed as if it had been lowered by a fracture; a catheter was with difficulty passed through an obstruction into the bladder. Perineal section allowed of the removal of the enormous calculus exhibited, it having been entirely urethral as to location. Examination of the stone indicated that it was developed in the membranous urethra, because even in the nucleus is a groove corresponding to the situation of the external sphincter muscle.

The second specimen was interesting because it lay in the bladder just within the urethral opening, where it became lodged in the eyelet of a catheter.

A number of pyramidal-shaped stones were shown. These had been found in a hypertrophied bladder and were interesting because all had approximately the same pyramidal shape. They were of calcium phosphate with uric acid nuclei.

Other specimens were shown to illustrate a case in which stones were removed from a bladder, careful search making it positive that the bladder had been entirely emptied, yet from which another stone was removed at the end of eight weeks.

Renal calculi were exhibited and the history given in each case; these cases were recounted to illustrate the difficulty of diagnosis and the anomalous symptoms presented in such cases.

Dr. Hagner congratulated Dr. Fowler upon the interest of his specimens. The most interesting to Dr. Hagner was the urethral stone, the largest of the kind he had ever seen. These stones may occur in the urethra after operations; when the integrity of the canal is interfered with a point is left where stone formation is likely to occur. A suture will sometimes act as a nucleus; he had such an experience once, since which he has never used any but absorbable suture material for urethral work.

The frequency with which renal calculi may exist with only vesical symptoms was well exemplified by Dr. Fowler's cases. The occurrence of vesical irritation in such cases is due to the fact that the same set of nerves is concerned in reporting pain, both in the bladder and the ureters; and bladder irritation is kept up by the passage of pus-laden urine from the diseased kidney over the vesical mucous membrane.

SYMPOSIUM.—The *British Med. Jour.*, May 22, 1909, p. 1246, criticises the use of this word in the sense of being a series of papers or discussions on one and the same subject. The meaning of the word is—a drinking together, or drinking party.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE
DISTRICT OF COLUMBIA.

Wednesday, May 19, 1909.—The President, Dr. E. A. Balloch, presided; about 60 members present.

Dr. P. C. Hunt read a paper entitled "Insanity; the Home Treatment of the Patient." Discussed by Drs. Wm. A. White, DeWeese, Hickling, Williams and Hunt. See p. 227.

Dr. Wm. B. Carr read a paper entitled: "The Treatment of Compound Fractures of the Leg Below the Knee." Discussed by Drs. W. P. Carr, Vaughan, Snyder, Van Rensselaer, Groover and W. B. Carr.

Wednesday, May 26th.—The President, Dr. Balloch, presided; about 95 members present.

Dr. Joseph A. Murphy, U. S. N., was elected a member by invitation.

Dr. McLaughlin called attention to the approaching sessions of the XVIth International Medical Congress at Budapest; as Dr. Noble P. Barnes expected to attend this congress he moved that Dr. Barnes be appointed as delegate from the Society. So ordered.

Dr. A. R. Shands presented a patient to illustrate the Advantages of the Operation of Arthrodesis in certain paralytic conditions. See p. 242.

Dr. H. A. Fowler presented a number of specimens of Urinary Calculi, and reported briefly upon the cases in which they had occurred. Discussed by Dr. Hagner. See p. 242.

Dr. H. D. Fry addressed the Society upon the subject of "The Prognosis and Dietetic Management of Diabetes Mellitus." Discussed by Dr. Lochboehler. See p. 239.

The Society then adjourned *sine die*.

Stated Meeting, July 5.—The President, Dr. Balloch presided; fifteen members present.

An appropriation of \$108.88 for the July number of the ANNALS was granted, carrying with it an authorization to the Treasurer to pay the bill for the September number of the ANNALS.

Dr. D. S. Lamb, for the Committee on the History of the Society, reported progress in the printing of the History; he presented specimen pages, illustrations, etc., for the information of the Society. He was authorized to draw on the Treasurer for such funds as might be needed. He was also authorized to publish a circular to bring the History to the attention of families of deceased members or others who might be interested.

The following candidates for membership were proposed:

Tom A. Williams, University of Edinburgh, 1896.

Francis M. Chisholm, University of Maryland, 1889.

Jos. J. Mundell, Georgetown University, 1903.

Henry V. Johnston, George Washington University, 1907.

Cornelius DeWeese, Jefferson Medical College, 1895.

It was ordered that the regular weekly meetings be resumed on the first Wednesday in October.

Dr. T. C. Smith announced that the fourth of July marked the 45th year of his membership in the Society, and was congratulated thereon.

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Editorial.

SPECIAL NOTICE.—THE HISTORY OF THE MEDICAL SOCIETY.

The printing of this History, which began last January, is now completed, and as soon as bound the book will be ready for distribution. It covers about 500 pages with 12 preliminary pages; contains 79 full page halftones of the members and of the places of meeting of the Society, so far as they could be procured. The number of members is 929, with a personal sketch of each so far as obtainable by the Committee. It is much to be regretted that so many members failed to furnish to the Committee the necessary information. The illustrations are well brought out by the cream tinted paper.

As soon as ready, a copy of the book will be sent to each member who has paid his assessment of \$3.00. Assessments should be paid to the Treasurer, Dr. C. W. Franzoni, 605 I Street, N. W., who will send to any address by mail a copy of the book at

that price. The books will be kept in stock for awhile by the printer, R. Beresford, 618 F Street, N. W., and can be obtained from him directly at the same price. Due announcement will be made of the completion of the work.

HOMŒOPATHY AT THE UNIVERSITY OF MINNESOTA.—As the result of the small attendance of students in the homœopathic department—some twenty-six professors and only two or three students, none in the freshman year—the department has been abolished, and simply the chairs of homœopathic materia medica and therapeutics retained.

SOCIETY OF MEDICAL SECRETARIES.—In South Carolina a society has been formed consisting of the secretaries of the several county medical societies. The object is to cultivate a closer relationship between the county societies; to establish improved and more uniform methods of conducting the meetings; to devise and develop the best means of creating and holding interest in the work, and of increasing the membership; and by coöperating with the officers of the State Society to promote the general welfare of the organized profession of the State. (See *Jour. S. C. Med. Assn.*, June, 1909, page 261 *et seq.*)

PARKE, DAVIS AND COMPANY have just published a "Manual of Therapeutics," referring especially to the products of their pharmaceutical and biological laboratories. Any physician can get a copy for the asking. It contains a miscellany of valuable information covering nearly one hundred pages, and the remainder of the book is given up to materia medica. The book is neatly bound in a flexible cover.

The same firm has also introduced a "chloroform dropper ampoule," a "hermetically sealed container and a perfect dropping bottle that can be carried about in the emergency bag, at all times in readiness for immediate use." See advertisement.

AMERICAN HOSPITAL ASSOCIATION.—The Eleventh Annual Conference of this Association will meet at the New Willard Hotel in this city, September 21 to 24, 1909. The President is Dr. John M. Peters, of Providence, R. I.; Secretary, Dr. W. L. Babcock, of Detroit, Mich.

AMERICAN ASSOCIATION OF CLINICAL RESEARCH.—A meeting of physicians and surgeons interested in scientific clinical research is called for Wednesday, October 27, 1909, at John Ware Hall, Boston Medical Library, No. 8 Fenway, Boston, Mass., at 10 A. M. The object of the meeting is to establish an American Association of Clinical Research; to establish clinical research on an incontrovertible scientific basis in hospitals, and to institute a journal. All physicians and surgeons are invited to participate. Dr. James Krauss, of 419 Boylston Street, Boston, is chairman of the committee.

GUIDE TO HISTORY TAKING AND METHODS OF PHYSICAL EXAMINATION, ETC., for the use of students in the medical wards of the George Washington Univ. Hospital, Washington, D. C.—Dr. Sterling Ruffin, Professor of Medicine in the Medical School, has published a small pamphlet setting forth in detail the necessary steps to take in making a thorough diagnosis of a case of disease. This is the method followed by him in the instruction of his students.

THE ANNALS will publish any local medical news concerning the medical societies, hospitals, colleges and other institutions in this District, and the personnel of the same, whenever such news would be of general interest; provided, of course, that the information is given by persons who are known to the Editorial Committee.

EXCHANGES.

American Journal Surgery.
Annals Gynecology and Pediatrics.
Buffalo Medical Journal.
California State Journal Medicine.
Colorado Medicine.
Cronica Medica Mexicana.
Journal Kansas Medical Society.
Journal Medical Society New Jersey.
Journal Michigan Medical Society.
Journal Missouri State Medical Association.
Journal South Carolina Medical Association.

Louisville Monthly Journal Medicine and Surgery.
Maryland Medical Journal.
Monthly Cyclopedia and Medical Bulletin.
New York State Journal Medicine.
Northwest Medicine.
Northwestern University Bulletin.
Old Dominion Medical Journal.
Pacific Medical Journal.
Pathologica, Genoa.
Pennsylvania Medical Journal.
Proctologist.
Providence Medical Journal.
Texas State Journal Medicine.
Virginia Medical Semi-Monthly.
West Virginia Medical Journal.

PUBLICATIONS RECEIVED.

W. K. Simpson, "Case of Laryngeal Diphtheria Complicating Cerebro-spinal Meningitis." Also, "Case of Laryngeal Stenosis in which an Intubation Tube was Worn Four Years." Also, "Sarcoma of Naso-pharynx." Reprints.

Report of the Woodmen of the World, National Fraternal Congress, on International Congress on Tuberculosis; August 16, 1909.

University of Colorado, Medical Bulletin V, No. 1, June, 1909.

Wisconsin College of Physicians and Surgeons, Bulletin 1909-10.

George Iles, "Electricity; Uncovers a Law of Evolution." July, 1909.

Lavinder, Williams and Babcock, "Prevalence of Pellagra in the United States." Published by U. S. P. H. and M. H. S., 1909.

Goldberger and Schamberg, "Epidemic of Urticarioid Dermatitis Due to a Small Mite in the Straw of Mattresses." Bureau P. H. and M. H. S., 1909.

Kebler, Morgan and Rupp, "Harmful Effects of Acetanilid, Antipyrin and Phenacetin." Bulletin 126, Dept. Agriculture, July 3, 1909.

Government Hospital for the Insane, D. C., Bulletin No. 1, 1909.

Dwight, "Concomitant Assimilation of the Atlas and Occiput, with the Manifestation of an Occipital Vertebra." "Notes on a Hypochordal Brace." Reprint.

Sterling Ruffin, "Guide to History Taking and Methods of Physical Examination, etc." For the use of students in the medical wards of the George Washington University Hospital.

Rosenau and Anderson, "Further Studies upon the Phenomena of Anaphylaxis." Bulletin 50, Hygienic Laboratory, U. S. P. H. and M. H. S., April, 1909.

Wertenbaker, "Colored Antituberculosis League," U. S. P. H. and M. H. S., 1909.

Neate, "Etiology and Pathology of Bilateral Polycystic Degeneration of the Kidneys." Reprint.

Rupert Blue, "Campaign Against Ground Squirrels in California," U. S. P. H. and M. H. S., 1909.

U. S. Naval Bulletin, July, 1909.

George Washington University Bulletin, Catalogue number, June, 1909.

Burroughs, "Report of 2,133 Cases of Pulmonary Tuberculosis Treated in the Asheville Climate from 1898 to January, 1907." Reprint.

Brinckerhoff and Moore, "Leprosy." U. S. P. H. and M. H. S., 1909.

Medical Miscellany.

The Nurse as an Anesthetist.—Baldy, *Amer. Jour. Obstet.*, June, 1909, page 997, concludes his article by stating that he feels that he has given a practical demonstration of the value of at least one possible source from which in future to draw anesthetists, and mentions that at the Mayo clinic at Rochester, Minn., the four official anesthetists are women.

The Ultramicroscope.—*New York Med. Jour.*, May 1, 1909, p. 912.—With the optical apparatus now ordinarily used the structural elements of a given body may be resolved down to the fineness of a quarter of a micron. Siedentopf has demonstrated details of structure by experiments with gold ruby glass on bodies apparently structureless, where the average single particles were

no smaller than half a wave length. Methods have been devised that render these ultramicroscopic particles visible. Some details are given in the editorial.

Embryonic Development in Man.—Herzog, in *Amer. Jour. Anatomy*, July, 1909, p. 361, describes in detail an ovum recently obtained, and that was slightly larger than the "Peters" ovum; and gives thirty illustrations. He states that the ovum represents the normal type of the earliest known stage of human placentation. Certain changes in the cells and syncytium of Peters' ovum are pathologic. His summary is too long to be abstracted; those interested in the subject should consult his article.

Bacteriology of the Blood in Convalescence from Typhoid Fever.—Coleman and Buxton, *Jour. Med. Research*, July, 1909, p. 92, elaborate their original theory (*Amer. Jour. Med. Sci.*, 1907, CXXXIII, page 896). The infection enters the body through the lymphatics of the intestinal wall. Thence the bacilli invade the general lymphatic system and spleen, where they grow chiefly, and where relatively few bacilli are destroyed. A few may filter through into the blood during the incubation period. When the development of the bacilli has reached a certain grade they *overflow* in quantity into the blood, where they are destroyed and their toxins set free. The symptoms represent the reaction on the part of the patient. If the case progresses favorably the growth of the bacilli in the organs is gradually controlled by the immunity processes; fewer bacilli are discharged into the blood; the symptoms lessen in severity. If the progress is unfavorable the growth of the bacilli in the organ proceeds unchecked.

About the time of defervescence the bacilli practically disappear from the blood. After the original fever is ended, if there is an intermittent temperature it is probable that the growth of the bacilli has not been completely checked and that a few are still being discharged into the blood. When the spleen remains enlarged after defervescence and a relapse occurs it is probable that complete immunity has not been established. The late appearance of local suppurations suggests that the general recovery has not conferred local immunity.

Coincidence of the Infecting Agents of both Malarial and Typhoid Fever in the Same Person.—Smallman, in *Jour. Royal Army Med. Corps*, Feb., 1909, p. 191, reports two such cases, both in soldiers in Bengal. These two occurred in a series of forty cases of typhoid fever. The tertian parasite was found in blood film, and a day or two afterwards the bacillus typhosus, by culture. In one case there was no periodicity, but in the other it was shown on the 6th, 8th and 10th days of the disease.

United States Naval Medical Bulletin, July, 1909.—Among the subjects considered in the Bulletin are the following:

Treatment of Elephantiasis by the internal use of tinct. ferri chloridi; by Surgeon Rossiter.—He reports a number of cases. Bandaging was omitted and the patients followed their usual avocations. The dose was 1.7 cc. in 250 cc. water three times daily. In all the cases the affected part became smaller and the fever lessened; the intermissions between the febrile paroxysms were lengthened, and in some cases the fever entirely ceased. In one case a marked chyluria disappeared. He thinks it possible to eradicate the disease from the community by a general use of the medicine.

Sixteen Cases of Heat Prostration; by Surgeon Grunwell.

Abscess of Liver.—In nearly all cases of tropical abscess of the liver, amebae are the exciting cause. Prophylaxis consists in preventing amebic dysentery and maintaining a high degree of efficiency of the liver itself. The successful treatment of the abscess depends on early diagnosis, skillful use of the exploring needle, the use of trained judgment in the selecting the drainage route, the ability to decide correctly upon a two- or one-stage operation, and painstaking attention to all the necessary details.

Case of Fracture of Patella; by Surgeon Blackwood, with x-ray illustration.—He concludes that with strict asepsis the best results are obtained by suturing the ruptured capsule; it is perfectly safe to operate within 24 or 48 hours after the injury. Absorbable sutures are the best for buried sutures, though they may be plain catgut. Massage and passive motion should be begun early and systematically continued until complete functional recovery.

Method for Preparing Flat Worms for Study; by Surgeon Mink and Hospital Steward Ebeling.

Beri-beri and Rice.—Fletcher, in *Jour. Tropical Med. and Hygiene*, May 1, 1909, page 128, discusses this subject very fully, and concludes that the cause of the disease is to be sought for in the diet. The experiments show that the use of white polished or uncured rice is the cause, either through some poison which it contains, or by starvation from lack of nutritive value. If the "cured" rice is used instead beri-beri does not occur.

Secondary Parotitis Due to Oral Starvation in the Medical Treatment of Gastric Ulcer.—Rolleston and Oliver, in *Brit. Med. Jour.*, May 29, 1909, p. 1296, consider this subject. They analyzed 34 cases; the parotitis occurred ten times as often as when the patients were given food by mouth. They believe that it is due to dryness of the mouth, not relieved, however, by mouth washes; it is usually unilateral; suppuration occurs in about one-fourth of the cases.

Third Sound of the Heart.—Thayer, of Baltimore, *Bost. Med. and Surg. Jour.*, June 10, 1909, page 754, found in 231 normal persons that 65 of those under 40 years old showed the characteristic third sound in greater or less intensity. It is probably due to a slight tension of the mitral valve associated with rapid filling of the ventricles; it coincides with the rush of blood from auricle to ventricle. The sound is probably present in most young persons when examined on the back and left side. In the discussion Dr. J. L. Wilson, of Philadelphia, stated that he had noticed the sound many times.

The Plague.—In the *Jour. Tropical Med. and Hygiene*, June 1, 1909, page 172, it is stated that in Kurachi, India, there were 1,206 street sweepers; of these 1,114 were inoculated against plague; of these 3 died of the plague. Of the 92 who were not inoculated 11 died of the plague.

Tuberculosis, Treated by Graduated Labor.—Quell, *North-west Med.*, July, 1909, p. 256, spent six months at the Brompton Hospital, the famous hospital for diseases of air passages, in London, England. The entire article is interesting. He names as constituting the grades of work and exercise given to the tuberculous patients: Grade 1, persons unfit for active exercise make mops, mats, and sew. Grade 2, walking from half a mile to six miles a day. Grade 3, picking up wood, carrying baskets filled with different articles that need to be moved; watering plants. Grade 4, using a small shovel, cutting grass edges, hoeing. Grade 5, digging broken ground, mowing grass. Grade 6, trenching, mixing concrete, felling trees.

Report of 2,133 Cases of Pulmonary Tuberculosis Treated in the Asheville Climate from 1898 to January, 1907.—Burroughs, in *Charlotte Med. Jour.*, April, 1909, states of the 2,133 cases there are possibly 1,800 now living. This statement is made after the most painstaking care in inquiry as to results and as to the condition of subjects. His patients are practically kept in the fresh air day and night. All patients, without exception, are instructed to take from 150 to 500 deep, full inhalations daily, always in the open air. The diet consists of cream, milk, eggs, beef, breakfast bacon, butter and salt. An average adult should take daily one pint of cream, one quart of milk, twelve raw eggs, a beefsteak weighing half a pound twice daily, several pieces of breakfast bacon, also in the morning; two large baked white potatoes. At noon he should eat anything he wants. At bedtime he is rubbed with lard. Tuberculous uvulae are amputated and tuberculous tonsils removed. A DeVilbiss spray of glymol with creosote. Internally creosote, cod liver oil, peptonate of iron and manganese, strychnia, codein.

Tuberculosis of the Abdominal Aorta.—Hedinger reports a case of miliary tuberculosis of the skin with tuberculosis of the abdominal aorta, in the *Frankfurter Zeitschrift f. Path.*, II, I, page 121. Woman 46 years old. The autopsy showed also a typical tuberculous meningitis, miliary tubercles of liver and spleen.

The Parasite *Histoplasma Capsulatum* and the Lesions of Histoplasmosis, a Fatal Disease of Tropical America.—Darling considers the morphology of this parasite in *Jour. Exper. Med.*, July, 1909, page 515. He regards the disease as a fatal infectious disease of tropical America, resembling the kala-azar of the East Indies. It is characterized clinically by splenomegaly, emaciation, irregular pyrexia, leucopenia and anemia. The endothelial cells of the smaller lymph- and bloodvessels and capillaries are invaded by enormous numbers of the parasite, causing necrosis of liver with cirrhosis, splenomegaly, pseudo-granulomata of lungs and small and large intestines, with ulceration of large intestine and necrosis of lymph nodes that drain the involved organs. He describes and figures the parasite. The mode of infection and portal of entry are unknown.

Infantile Paralysis.—Lovett reports on this subject for the Massachusetts Board of Health; *Boston Med. and Surg. Jour.*, July 22, 1909, page 112. His conclusions are that the disease is caused by some external agent; is an infectious disease; at the most is but mildly contagious; the harmful agent appears to enter usually the digestive canal.

Egg Poisoning.—Tyrode, in *Bost. Med. and Surg. Jour.*, June 3, 1909, page 718, reports a case which he explains as simply an idiosyncrasy; that such cases, if not simply idiosyncrasies, are due to ptomain poisoning.

Further Studies on the Phenomenon of Anaphylaxis.—By Rosenau and Anderson. Bulletin No. 50, Hygienic Laboratory, U. S. P. H. and M. H. S., April, 1909. Their conclusions are that the use of urethane, paraldehyde, chloral hydrate and magnesium sulphate as hypnotics in their experiments did not practically influence the fatal outcome of anaphylaxis. The effect of heat in modifying or destroying the sensitizing or poisonous properties of proteins probably depends on its effect in rendering the proteins insoluble, rather than by causing chemical changes in the protein. Animals sensitized with euglobulins prepared by one-third saturation with ammonium sulphate were not sensitive when quantities smaller than 0.001 cc. were used, while larger quantities than this sensitized guinea pigs. There is apparently no difference in the subsequent immunity whether the intoxicat-

ing injection be given subcutaneously, intraperitoneally or intracranially. In these cases the immunity was tested 24 hours after the second injection. It is suggested that antibodies are concerned in the mechanism of anaphylaxis. Guinea pigs may remain sensitive 1,096 days, over three years.

Functional Relation of Tonsil to Teeth.—Wright, in *Boston Med. and Surg. Jour.*, May 20, 1909, discusses this question and concludes (p. 639) that when the tonsil is normal, infection from the external surface is rare; infection then is usually secondary, through the lymph channels. The tonsils may enlarge without infection or inflammation at the time of eruption of molar teeth, and will return to normal size when the eruption is complete. Diseased teeth are prolific causes of enlarged tonsils by infection or by toxins.

Relation of the Spleen to Resistance to Infection.—Hubbard, in *Bost. Med. and Surg. Jour.*, June 10, 1909, page 743, concludes, from a study of a case and also of experiments, that the removal of the spleen does not alter practically the susceptibility of the individual to infection; the functions of the spleen are taken up by other organs.

Hemorrhagic Necrosis of Pancreas; Acute Hemorrhagic Pancreatitis.—Opie and Meakins consider this subject in *Jour. Exper. Medicine*, July, 1909, p. 561. The lesion is primarily a necrosis of the parenchyma of the pancreas, and may be caused by various injuries of the gland, usually chemical, occasionally mechanical. It is essentially a necrosis; the inflammatory changes are secondary to the necrosis. The extent of hemorrhage varies; may be large or small. The necrosis is not primarily the result of infection. The most frequent cause is the penetration of irritant material into the pancreatic ducts, as, bile diverted by a gallstone lodged at the duodenal orifice of the common bile duct; duodenal contents entering the duct may cause the disease.

Appendicitis Caused by Oxyuris Vulgaris.—Ashhurst, *Boston Med. and Surg. Jour.*, May 20, 1909, p. 653, reports a case. Dr. Deaver in the discussion stated that he had seen one similar case.

Intraperitoneal Infusion of Normal Salt Solution.—Knowlton, in *Jour. S. C. Med. Assn.*, June, 1909, p. 253, reports a case of appendicitis on which he operated and which a few days afterwards showed signs of collapse. He introduced three pints of sterile normal salt solution directly into the abdominal cavity, taking about twenty minutes to do so, and in half an hour the patient began to improve, and rapidly recovered.

Removal of the Appendix in every case of Abdominal Section.

—Laphorn Smith, in *Amer. Jour. Obstet.*, June, 1909, p. 984, concludes an article on this subject by stating that the more we think of the dangers of the appendix, especially during the puerperium, the better it would seem that we should remove it whenever we have the abdomen opened for other reasons. An expert operator can remove the appendix within an extra five minutes; and it is an immense relief to a patient's mind to be told that she will never need an operation for appendicitis.

Etiology and Pathology of Bilateral Polycystic Degeneration of the Kidneys.

—Dr. J. S. Neate, in *Amer. Jour. Obstet.*, 1909, LX, has a paper on this subject, carefully prepared, and based on examination macroscopically and microscopically of a number of specimens. He discusses the theories that have been advanced in explanation of the occurrence of the lesion. Of his conclusions perhaps the most important are that there is not enough difference in the microscopic pathology of the cysts for us to decide which are derived from fetal vestiges and which from normal tubules. Primary cysts derived from fetal vesicles or inclusions can only be a contributory factor and cannot be the chief agent in the general destruction of the kidney. The condition is inheritable in the sense that there is a predisposition or diathesis or tendency to cyst formation. He disbelieves in any malformation theory. Since the disease is inheritable, and more than 90 per cent. of cases are bilateral, or become so after removal of one cystic kidney, the operation of nephrectomy for cystic kidney is hardly justifiable.

Renal Excretion during use of Chloroform and Ether in Surgical Gynecology.

—Bovée, *Amer. Jour. Obstet.*, June, 1909, page 1004. His conclusions, page 1018, are that from a study of the sixteen cases that he reports it would appear that the rate of excretion of urine is markedly less in the anesthesia; the diminution is greater from chloroform than ether; under chloroform the proportion of urea to the entire excretion remains nearly normal, but in the case of ether is lessened; when properly used the two anesthetics have little effect on the production of casts and albumen in the urine; the Trendelenburg position greatly retards the rapidity of the urinary output.

Prostate Gland weighing 17 ounces Removed by Suprapubic Route.

—Fullerton, in *Brit. Med. Jour.*, May 22, 1909, page 1230, reports a case. The patient suffered from very severe shock, and with much difficulty was kept alive after the operation; but rallied well, and ten days after the operation was doing well.

Vasectomy on Criminals.—The House of Representatives of Connecticut has passed a bill, following the step taken by several western States, providing for the operation of vasectomy on

criminals and inmates of State asylums for defectives, in cases where the physicians deem it wise to prevent the breeding of other defectives.

Metrorrhagia at Advanced Age.—Lewis, *Lancet*, April 24, 1909, *Medical Record*, N. Y., May 15, 1909, p. 859, reports two cases: one at 73 years, the menses had ceased at 53; at 73 years there was an escape of blood lasting nine days, followed by a continuous stained discharge. On examination an adenomatous polypus was found, and removed without incident. The other woman was 70 years old; menses had ceased at 50. She had had a discharge for eighteen months. Here also was a polypus. Hemorrhage at this age generally means malignant disease.

Cystic Carcinoma of a Supernumerary Ovary.—Glazebrook, in *Jour. Med. Society, New Jersey*, August, 1909, p. 125, reports such a case.

The Influence of the Ovarian Secretion on the Mammary Glands.—Bouchacourt (*Jour. de Med. de Paris*), *Medical Record*, May 15, 1909, p. 849, states that it is probable that the development of the mammary gland at puberty is due to the influence of an ovarian secretion. He says that the nursing woman should preserve a condition of sexual repose; when menstruation recurs lactation should cease. At the menstrual period the nursing woman should receive additional nutrition, and some nursings may be replaced by the bottle. A new pregnancy during lactation should be the indication for the gradual introduction of artificial feeding.

Mammary Cancer Recurring Fourteen Years after Operation.—McNeill, in *Brit. Med. Jour.*, April 3, 1909, p. 841, reports a case. The left breast and all lymphatic nodes were thoroughly removed. For fourteen years the patient's health was good. Then the disease reappeared in the ends of the old incision, ulcerated, spread rapidly, and finally involved the other breast, and she died.

Cancer of Female Breast.—Jackson, in *Jour. Kansas Med. Society*, July, 1909, page 229. He has studied this subject in the light of the reports made by many operators, and draws the following conclusions: At least 90 to 95 per cent. of tumors of the breast are malignant. Tumors apparently benign may become malignant. There is no cure known except surgical operation. From 25 to 50 per cent. of cases of cancer of breast are permanently cured by radical surgical removal; with an early diagnosis this percentage could be raised to 80. The mortality of opera-

tions apparently formidable should not be over one per cent. Every tumor of the breast should be considered malignant and treated as such unless an incision shows it to be benign.

Atrophic Rhinitis Treated with Vaccine.—Mosher, in *Bost. Med. and Surg. Jour.*, May 20, 1909, page 646, has treated ten cases with mixed vaccine of staphylococcus albus, aureus and citreus, and although after eleven months' treatment none of the cases were cured, the most annoying symptoms, as the odor, large crusts, dryness of throat and headaches, had been improved and in many cases removed. He believes that these results justify the treatment.

Eye Trouble and Moving Pictures.—King, *Jour. Amer. Med. Assn.*, August 14, 1909, p. 320, states that a great deal of eye trouble is due to moving picture shows; and he adds that the singers, musicians and film operators fall easy victims to tuberculosis through excessive vocal efforts, constant confinement, irregular habits and long hours.

Public Health Reports, U. S. P. H. and M. H. S., July 9, 1909.—Goldberger and Schamberg report an epidemic skin infection that prevailed in and around Philadelphia, Pa., in May; first described by Schamberg in 1901. A dermatitis, resembling urticaria, due to a small mite that was found in the straw of mattresses. The name of the mite is *pediculoides ventricosus*.

Pus from the Maxillary Sinus; Bacterial Analysis of Forty Specimens.—Faunce, in *Boston Med. and Surg. Jour.*, May 20, 1909, p. 652, says that the bacteria were often much attenuated, which probably explained his poor results in treating with autogenous vaccines. All antrum cases should be examined bacteriologically before radical treatment is instituted; the presence of saprophytic bacteria is common and is not unfavorable.

Curvature of Spine Caused by Calcification of Pleuritic Exudate.—Thomas Dwight, of Harvard University, in *Boston Med. and Surg. Jour.*, June 3, 1909, p. 699, reports the case. The specimen is in the Harvard Museum.

Government Hospital for the Insane; Bulletin No. 1, 1909.—This Bulletin contains the following articles:

The Relation of the Hospital for the Insane to the Medical Profession and to the Community; by Dr. Wm. A. White, the Superintendent. A very practical presentation of the subject.

The Present Status of Psychiatry in America; by Dr. H. W.

Miller, Clinical Director. Also a good presentation of the subject.

The Morbid Anatomy of Mental Disease; by Dr. I. W. Blackburn, Pathologist. As all Dr. Blackburn's work, this is painstaking, exact and conservative.

The Functional View of the Insanities; by Dr. S. I. Franz, Psychologist. He believes that, while not neglecting the structural studies, in psychiatry we need to pay more attention to the functional studies.

The Standpoint of Histopathology in the Study of Mental Diseases; by Dr. Nicolas Achucarro, Histopathologist. This paper when read was illustrated with lantern slides. He urges more especially the structural study.

The use of Association Tests in Determining Mental Contents; by Drs. Franz and White.

Case of Unilateral Alcoholic Hallucinosiis; by Dr. White.—A young man in good health; alcoholic though not seriously so; not enough to show a condition of hallucination based on toxemia of the end organs. Owing, however, to a state of hypersusceptibility of one ear, caused by disease, and the existence of the pathological mental state, the result of the use of alcohol, the case was constellated by the abnormal sounds. These sounds being attended to, a vicious circle was established, and he heard actual "voices." These voices expressed fundamental though unappreciated needs and longings of the individual.

Case of Delirium Caused by Bromides; by Dr. Mary O'Malley, Assistant Physician, and Dr. Franz.—The case showed the danger in the use of what is usually considered a harmless drug, and also the difficulty the psychiatrist has sometimes in making a diagnosis.

Cytological Examination of the Cerebro-spinal Fluid; by Dr. W. H. Hough, Assistant Physician.—This article is quite full and has a bibliography and illustrations.

The bulletin as a whole is valuable and speaks well for the future of the series.

Leprosy.—Brinckerhoff and Moore have studied the question of the examination of the nose and nasal secretions for the detection of incipient cases of leprosy. Published by U. S. P. H. and M. H. S.; 1909. The conclusions they reach are as follows: The routine examination of the nasal septum and nasal secretions in a race with high incidence of leprous infection did not reveal as many cases of leprosy as would be expected; the examination is, therefore, not of dominant value; the conditions found in the noses of nonleprous children of leprous parents do not differ in important respects from those in children of nonlepers; the examination is valuable in permitting the recognition of the most dangerous type of the disease.

Meningitis [Cerebro-spinal].—Elser and Huntoon, *Jour. Med. Research*, June, 1909, pp. 377 to 541. Their conclusions are as follows: The meningococcus is transmitted directly from one person to another through the air. Germ carriers play the most important part in disseminating the disease. Most persons are naturally immune. In persons who have the disease the meningococcus is almost constantly present, and at an early period also in the respiratory passages; this indicates that the germ gains access through these channels. The meningococcus is not normally an inhabitant of the human throat and is but rarely found there. It is destroyed in the stomach. The germs are not found in the naso-pharynx of children who have the disease; children with the disease are relatively harmless to other persons. How the meningococcus reaches the brain cannot be definitely stated; the evidence so far points to the blood. One other germ can produce epidemics of the disease, namely, the encapsuled streptococcus of Bonomé.

Therapeutics of Solution of Calcium Creosote.—Kolipinski, in *Monthly Cyclop. and Med. Bulletin*, June, 1909, p. 328, gives a method of preparing this drug, the dose in which it should be used, and mentions the occasional disagreeable effects. He has used it in pneumonia; believes that it cuts short the disease, lowers the fever, slows the pulse and respiration, etc. In typhoid fever he has found that it reduces the period of the disease to fifteen and even seven and nine days. Also in cholelithiasis; he reports several cases. He also has used the drug in scrofula, in tuberculosis, summer diarrhea, etc., with satisfactory results.

Bacteria in Milk.—Anderson, in *Jour. Infectious Disease*, June 12, 1909, page 392. The paper discusses the relative proportion of bacteria in the cream layer and the bottom or skim-milk layer and its bearing on infant feeding. In his summary he states that top milk sometimes contains from 10 to 500 times as many bacteria to the cc. as the mixed milk, and thinks that this preponderance of bacteria in top milk may explain why infants sometimes do not thrive on modified milk that is made from top milk. When milk is centrifugalized the most of the bacteria go to the cream; a smaller number to the sediment. Skim milk contains many times less bacteria than either the cream or sediment layers. Cream raised centrifugally contains more bacteria to the cc. than cream raised by gravity from the same milk.

Coffee as a Beverage; its Use and Abuse.—Amory, in *Bost. Med. and Surg. Jour.*, May 13, 1909, p. 611. He advocates that coffee be prepared in cold water. The coffee, finely ground, is placed in a porcelain or china percolator, such as the Austrian

coffee biggin, and the cold water is passed through the coffee. This extracts only one-ninth of the bitter caffen and one-fifth of the tannin, and preserves the aroma of the volatile oils. Amory has used this method eight years and is well satisfied with his experience. Coffee thus prepared may be kept sweet for several weeks, if well corked and in a cool place. He always prepares it in a concentrated form, and just before drinking adds hot water, hot milk or hot cream. In this way he has a cup of fragrant coffee without the bitter taste of an excess of caffen or tannin. The coffee should not be ground until the time of preparing the infusion, otherwise the oils evaporate. The biggin should not be of metal. He adds many minute directions that he considers necessary to get the best results.

The Harmful Effects of Acetanilid, Antipyrin and Phenacetin.—By L. F. Kebler, Ph. C., M. D., Chief, Division of Drugs, Bureau of Chemistry, with the collaboration of Drs. F. P. Morgan and Philip Rupp, Assistant Chemists.—U. S. Department Agriculture Bulletin No. 126, issued July 3, 1909. This Bulletin sets forth the results of an investigation conducted by the Bureau of Chemistry. During recent years the use of these remedies and preparations containing them by laymen, without the supervision of the physician, has rapidly increased, and coincidentally there has been a marked increase in the number of cases of poisoning reported, the number of fatalities, and the instances of habitual use.

Since the passage of the food and drugs act, June 30, 1906, the attention of the Department of Agriculture has been directed to this subject, particularly in connection with the branding of drug products containing one or more of these agents, and an attempt has been made to obtain full and reliable data with regard to their poisonous qualities with the object of informing the public.

Nearly a thousand letters were addressed to physicians throughout the country, and four hundred replies were received.

The information obtained from medical literature is set forth in Section A of the accompanying table, and Section B is based upon the data submitted by physicians. The question may profitably be asked, if 925 physicians have observed 814 cases of poisoning by these drugs, with 28 deaths and 136 instances of habitual use, how many such cases have in all probability been observed by the 125,000 physicians distributed throughout the United States?

The bulletin contains information with regard to the extent to which acetanilid, antipyrin and phenacetin are employed by physicians, dosage, poisoning and habitual use, the nature of the ill effects produced, etc. It also contains references to the recorded cases of poisoning by these drugs, together with a brief abstract of each case.

POISONING BY ACETANILID, ANTIPYRIN AND PHENACETIN.

A.—Cases Recorded in Medical Literature.

	Poisoning.	Death.	Habitual use.
Acetanilid.....	297	13	32
Antipyrin.....	488	10	...
Acetphenetidin.....	70	3	1
Total.....	855	26	33

B.—Data Submitted by Physicians.

	Poisoning.	Death.	Habitual use.
Acetanilid.....	614	16	112
Antipyrin.....	105	5	7
Acetphenetidin.....	95	7	17
Total.....	814	28	136

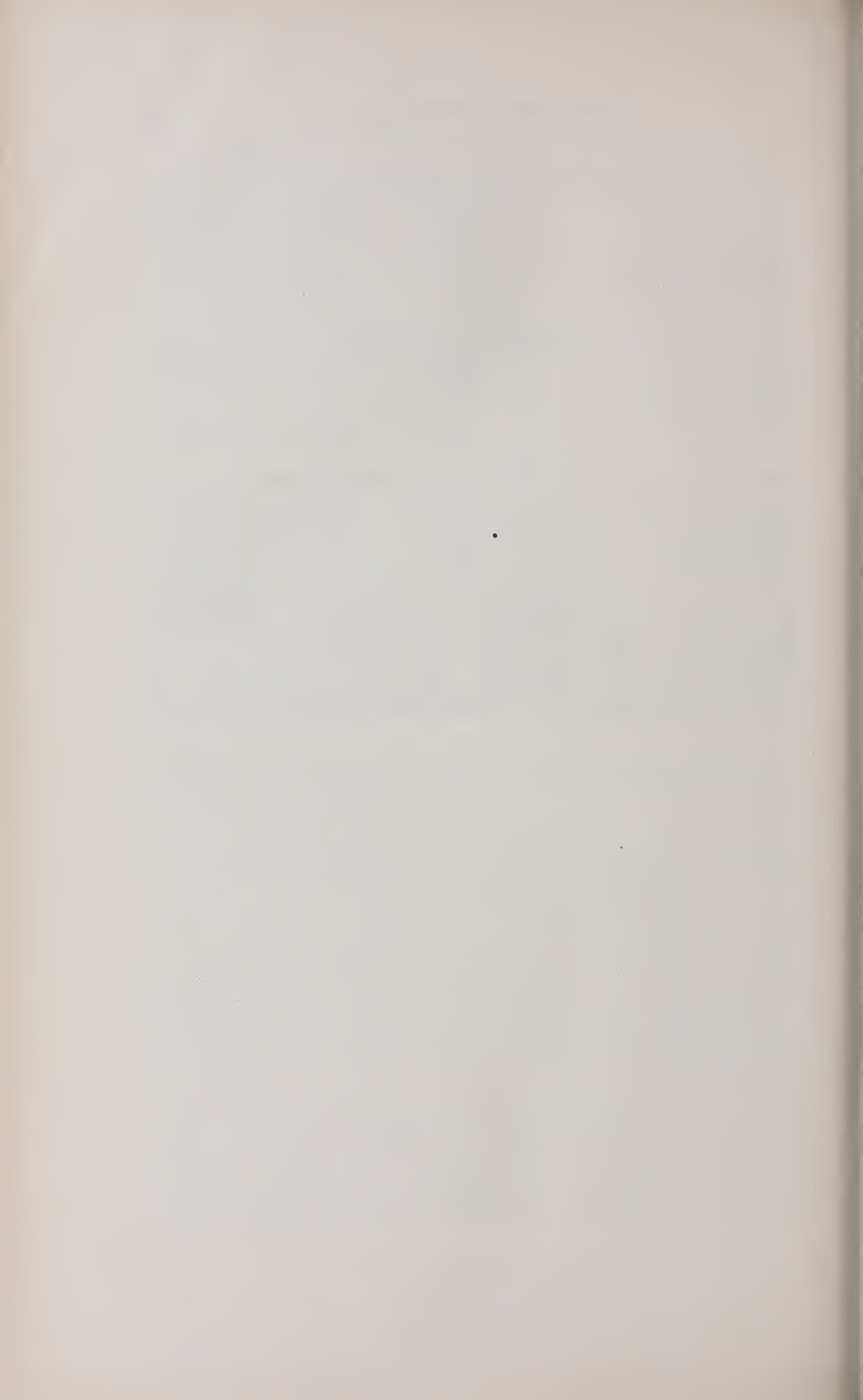
C.—Total Number of Cases

	Poisoning.	Death.	Habitual use.
Acetanilid.....	911	29	144
Antipyrin.....	593	15	7
Acetphenetidin.....	165	10	18
Total.....	1,669	54	169

<i>Poisoning.</i>			<i>Death.</i>			<i>Habitual use.</i>			
A.	B.	Total.	A.	B.	Total.	A.	B.	Total.	
Acetanilid	297	614	911	13	16	29	32	112	144
Antipyrin.....	488	105	593	10	5	15	...	7	7
Acetphenetidin.....	70	95	165	3	7	10	1	17	18
Total.....	855	814	1,669	26	28	54	33	136	169

A. Cases reported in medical literature.

B. Cases reported by physicians to Dept. Agriculture.



WASHINGTON MEDICAL ANNALS

CAESAREAN SECTION.—THE OBSTETRICIAN A SPECIALIST.*

By J. THOMAS KELLEY, JR. M. D.,

Washington, D. C.

Childbirth has so long been considered a natural process, and such a large majority of women are delivered easily and safely that the average practitioner, who has had a hundred or more deliveries with no maternal mortality, is apt to think that all cases can be delivered with forceps if the labor is not spontaneous.

A certain fetal mortality is so common that we are usually satisfied if we save the mother, the delivery being a high-forceps one. The family, too, rent with anguish because of the long-continued suffering of the patient, is glad to have it over, even if the child is sacrificed.

We have only to look over the journals of late years and see the agitation of obstetricians as to the best way to overcome certain difficulties in the way of a safe labor to the mother and journey to the child to know that there is frequently great danger to both.

Every practitioner of medicine should be so trained that he is able before the patient goes into labor to determine if she will be normally delivered or if some operation is necessary, except, of course, the ordinary low forceps. The specialist is the one who should know what procedure will give the best result. It is not fair, then, that the patient should be brought to him after every means of the general practitioner has been exhausted, the patient weakened by the loss of blood and prolonged labor, and probably septic.

* Read before the Medical Society, October 6, 1909.

It is to urge better training on the part of the family physician, and special training on the part of a few to whom we may go when these difficulties present themselves, that I present to you tonight this subject of Caesarean Section.

It has been only since the advent of aseptic surgery that any operation upon a pregnant woman for the delivery of the child was successful enough to become a routine practice, for before this era the mortality was so frightful that only the bold rushed in, and then only in cases in which death to the mother was certain. It is because of the very newness of all surgery that such an apparent difference of opinion exists among those best qualified as to the proper procedure in a given case.

According as an operator has had the best success with a certain method, so he writes, and we are apt to become confused by the large number of papers on the subject. But that the dissension is only apparent all can see who take the time to read carefully, for almost all the accepted procedures have their place.

Every patient should be carefully measured and examined at about the seventh month. Pelvic measurements are not exact, nor are all fetal heads the same size, but the routine of pelvic measurements and abdominal palpation so familiarizes the practitioner with the relative size of natural pelvises and fetal heads that he will never commit the crime of using high forceps and great force upon a head that cannot come through a given pelvis safely. He will learn to find obstructions, such as tumors, bony growths and cancers, and to approximate the size of the child's head. The patient should be seen at least once a month for the first seven months and twice a month afterwards, and her general condition noted, for a strong woman is able to deliver a child through a pelvis that a weak and delicate one would find impossible or difficult.

The family physician is the accoucheur throughout our country, and it is to him we must look for improvement in aseptic technic (for no one wants to operate upon a septic patient), for recognizing early any abnormality and for good care of the pregnant woman.

There are certain indications which require interference; some are only relative while others are fixed. No full-term child can be delivered through a pelvis which measures five centimeters in the conjugata vera, and a child of normal size cannot be deliv-

ered when the conjugata vera is as much as eight centimeters, but a child with a very small head might be.

Other indications besides contracted pelvis are myomata in the lower segment of the uterus, sometimes ovarian or other tumors, cicatrix of the cervix or vagina and carcinoma of the cervix. Besides conditions which prevent the delivery we have indications which require an immediate delivery, such as placenta previa and puerperal convulsions. A pelvis may be so contracted that nothing but a Caesarean Section would produce a living child, but with a small degree of contraction some procedure which would widen the pelvis may allow a living child, as symphysiotomy or hebotomy, and delivery of the child before term.

Caesarean Section is the old operation, and to my mind is the procedure which will appeal to most operators in the future for the most serious cases and also for those others which now are considered best done by some operation which seems at first sight to be a smaller operation, if not a minor one.

The obstetric forceps was one of the first means in our hands to help us in our efforts to relieve a woman who seemed unable to be delivered spontaneously. That forceps are not always potent all of us know who have seen several stout practitioners, one after the other, pull at the handles until the sweat stood out on their brows and the patient was all but pulled apart. I know of no more unscientific operation than that of high forceps as usually applied. Miles F. Porter, quoting from several distinguished authors, gives the maternal mortality in high forceps version and premature labors from 1 to 58 per cent., and a fetal mortality from 20 to 50 per cent. Porter speaks of the morbidity and, quoting from Liesenwitz, says that 73.6 per cent. of mothers are injured to such an extent as to require sutures, the injuries including those to the perineum, bowel and bladder, aside from fractures; he found that 5.45 per cent. of children had facial paralysis, and 1.15 per cent. paralysis of a nerve plexus.

In 103 cases Baumanns claimed that 16 per cent. of women had a puerperium, and in 7 per cent. there was a serious injury of some kind, while of the children 22 per cent. were born dead and 10 per cent. seriously injured. Twenty-nine per cent. of idiots admitted to the Royal Albert Asylum were attributed to forceps delivery.

Summary statistics from fifteen authors give to high forceps,

version and induction of premature labor a maternal mortality of 1.14 per cent. and fetal 17.3 per cent. ; a maternal morbidity of 42 per cent. and a serious fetal morbidity of 12.5 per cent. The obstetric forceps is the most valuable aid in the hands of the obstetrician, but judging from the above statistics we again must see that every patient should be so studied beforehand as to know what is best for her and her unborn child.

Symphysiotomy was first done in 1777 by Sigault, but soon fell into disuse until 1866, when it was rehabilitated by Morasini, since which time it has been vociferously praised on the one hand and loudly condemned on the other by equally good operators.

Those who object most seriously to symphysiotomy in appropriate cases, that is, in those cases in which the mother and child may come through alive, do so because of the morbidity of the mother, claiming that the symphysis does not unite sufficiently to make the woman again strong, and the operation leaves her weakened and with impaired locomotion.

Accordingly, Gigli, in 1893, suggested that the pubic bone be sawed through just outside of the pubic joint, and Bonard, in 1897, did the first successful case.

This operation, called pubiotomy, hebotomy or hebstectomy, is applicable to all cases in which a symphysiotomy would be done, and is probably a better operation, but if a Gigli saw is not at hand a symphysiotomy may be done with almost no instruments.

McPherson says, "symphysiotomy has been unwisely given up, and that the reports of hebotomy are far from encouraging, because of the injuries to the mothers and the tardy recoveries."

Chas. B. Reed has written a most excellent article on pubiotomy. He says it is contraindicated in pelves with conjugata vera of less than 7.5 cm., and does not therefore compete with Caesarean Section for absolute indication. It is not required in pelves of more than 9.5 cm. conjugata vera. He claims that the operation is simple, the mother uninjured and improved for childbearing, since the pelvis remains enlarged. He thinks the operation will be permanently established.

Henry Lewis, in a résumé of recent literature on pubiotomy, concludes that the mortality in Caesarean Section is falling off every year, and it will take the place of pubiotomy and symphysiotomy in all cases when the patient is seen early. He thinks

that in infected cases the danger from either of the latter operations is very little less than in Caesarean Section and that the indication for either will become narrower and narrower as time goes on. In undivided cases the decision will be between Caesarean Section and perforation rather than between symphysiotomy and pubiotomy.

No one, even after he has measured the pelvis and the child's head, is able to tell just what damage may be done to the soft parts, for we have all seen the tissues, especially in old primipara, split even into the rectum, though there may be no disproportion between the bony pelvis and the fetal head.

There is no procedure for the delivery of a child except spontaneous delivery that is without danger of permanent injury to the woman, except Caesarean Section. No other operation is done without danger to the child. All other operations, pubiotomy, symphysiotomy and hysterotomy, leave the child still to be delivered, with all the dangers to the mother of injuries due to a large child passing through the birth canal, and great danger to the child.

After the pelvis is widened in symphysiotomy or pubiotomy, there may be and usually is a difficult high forceps operation with its attendant risks. High forceps, symphysiotomy or pubiotomy all have the disadvantage of possible injuries to the soft parts and probable injury to the child.

Any operator who does midwifery and gynecology, who will review his cases, will call to mind many instances of traumatism in his obstetric work which require secondary operation for their correction and in some cases cause permanent or prolonged disability.

Primary Caesarean Section has practically no morbidity for the mother, and in healthy women a mortality, I believe, of not more than one per cent., while the injury to the child is nothing.

I would suggest, then, that pubiotomy be reserved for those cases where the labor has been in progress some hours, the first stage having passed and a little or more progress made in the descent of the head, because the head is too large for the pelvis but may come through the latter if it were widened somewhat. In such a case there is a probability of an infection and possibly a greater risk in Caesarean Section than in some apparently milder operation.

Caesarean Section depends for its success upon whether it is done as a last resort or as an elective operation. Reynolds collected 289 cases of Caesarean Section by twenty operators; 82 were primary, 158 secondary and 49 late. The 49 had been in labor 24 hours, and had a mortality of 12 per cent.; the 158 in labor less than 6 hours, a mortality of 4 per cent.; the 82 were done before labor, with one death, or a little more than 1 per cent.; that is, the mortality was 12 per cent. in late cases and 1 per cent. in primary cases, which teaches its own lesson.

The great question, then, is, how can we determine beforehand if a patient can be delivered safely. This is not always possible, for there will always be doubtful cases.

That nearly all, if not all, Caesarean Sections may be primary, with small mortality, some method that will give the best results is what we want. It is a great mistake to think that measurements of the pelvis will be all, for pelvic measurements are very misleading, though of great value.

There are three great factors—the pelvis, the fetus and the power a woman may have to push the child through—and he who leaves out of the count any one of the three may fail in his prognosis.

The pelvis should be carefully measured and also carefully examined before labor, by the examining finger, for any abnormalities and any variation of shape. I have seen women with apparently normal measurements, with a sacral promontory projecting so far towards the pubis as to make the labor very difficult.

A normal pelvis can usually be determined at the first examination, but if there is any doubt, several examinations should be made, and if doubt still exists and the size and consistency of the child's head not determined, it is allowable and sometimes most necessary that the patient should be examined under anesthesia, just before labor or when labor has begun. After these examinations have been made the third factor, viz: the strength and health of the mother, should be weighed in the balance, for it is well known that a weak, delicate woman bears a primary Caesarean Section far better than a late forceps or version.

The examination under anesthesia, which is made to more thoroughly study the pelvis and the fetal head, should be made with as much antiseptic care as if a Caesarean Section were to be done.

If the patient is a multipara the former labors should be taken into account, for a patient who has a long, tedious labor is apt to have all her labors in like manner, whether it is from the pelvic formation, the fetal head or the lack of strength of the mother. If, therefore, she has had difficult labor, with the great morbidity of several stillbirths from difficult labor, a Caesarean Section is less dangerous to her and infinitely less to the child.

Two of my cases were multipara. The first I had helped deliver with high forceps, after the patient had been in her first labor for twenty-four hours. The child was dead and the patient most horribly mutilated, and being in a private house with no facilities for asepsis, was badly infected. The next labor also was high forceps with a dead child. Her third labor was more fortunate, coming on at about seven and a half months; she was delivered of a live child, but with high forceps. Her fourth pregnancy came to term; the child's head was large and hard. I saw her first when she was in labor, and did a Caesarean Section, with no maternal morbidity and a large, healthy child.

The other multipara had had four stillbirths, and living near the previous patient, came to my office asking for Caesarean Section. She also had no morbidity, and has a fine, healthy child.

Sometimes we see patients who have had no physician during pregnancy, and we are called after labor has progressed; or one in which we may have been mistaken as to her ability to be safely delivered. These are the cases which require careful thought. If she is able to be delivered by forceps, with a vast probability of a dead child, this should be told her, and if she is very desirous of a living child the mortality of a Caesarean Section should be explained (about two to four per cent.), and if she so elects I believe a Caesarean Section should be done. In these cases one factor should be carefully considered, *i. e.*, what is the probability of the woman being already infected. All of us have seen cases of a dirty midwife with her dirtier fingers in the vagina.

Vaginal Caesarean Section, or hysterotomy, introduced by Duhressen, is applicable to a different class of cases than the classical Caesarean Section. This operation is used in those cases in which a rapid delivery is required and when the bony pelvis is comparatively normal, but the os uteri is rigid.

An extraperitoneal Caesarean Section has been done and is urged in cases known to be septic. The incision is made near

the pubis and much after the manner of a suprapubic cystotomy. The peritoneum is separated over the bladder and an endeavor made to deliver the child without getting into the peritoneum. I have had no experience with this operation, but I believe it would be difficult not to get into the peritoneum.

It is not expected that all practitioners who attend labor cases should be specialists, for a large majority of women are delivered normally, or by forceps, with a living child; but every one should be expert enough to tell when a patient will not be delivered normally or by forceps with a living child, and, if in doubt, should call in some one who is an expert, who may determine the best mode of procedure. If possible, all cases which will require some operation should be diagnosed before labor, but there will always be those border-line cases which will have to go to labor and have a slight attempt at normal delivery, before a Caesarean Section is done, but this should be at least suspected and provision made.

The specialist should be a man of large experience and skilled in diagnosis and operative procedures, to whom cases may be referred, not to be cared for by him, but for an opinion as to whether it will be a normal birth or some operation. This opinion, with the patient, should be referred back to the practitioner who sends the patient.

Reynolds gives the following classes of cases of which we are to be suspicious, and in which a determination of the mechanical condition during pregnancy should be made: All primipara who have done heavy, muscular work during the period of development, and more especially all those who present a short, squat, short-legged appearance. All primipara of small stature. My fifth case belonged to this class, the pelvis being symmetrically small. All primipara with narrow-hipped, long, straight-legged, flat back, boyish style of figure. All primipara with bandy legs, protuberant buttocks, prominent abdomen and usually hollow lumbar region. All primipara of delicate general health. All multipara who have had one difficult, disastrous labor.

Case 1. Mrs. B., age 28, about one year married, menstruated first at 14 years, regular, never had any trouble. Primipara; had gone to full term; was attended by a homeopathic physician, who finally, when she had not been delivered after 48 hours, left her and did not return. I saw the case with Dr. Mayfield about

2 A. M., after she had been in labor 72 hours, and found a well-developed patient with a normal bony pelvis. The fetal head, which seemed rather large, could be felt indistinctly in the right ilium. The uterus was in tonic contraction, making it difficult to definitely outline the fetus or hear the fetal heart. There was a tumor completely filling the vagina and situated posteriorly. I thought this to be a blood clot, but afterwards made up my mind that it was an edematous condition produced by long labor. For the history of long labor and strong pains which were ineffectual, and the presence of this condition of the vagina, I advised Caesarean Section, which was readily consented to by the physician and patient. She was immediately removed to Columbia Hospital, hastily prepared, and the operation of Caesarean Section was done. There was nothing unusual in the technique. The abdomen was opened, towels packed in above the uterus, this organ was hastily opened, an assistant compressing the broad ligaments. The child was immediately delivered, the cord cut, and the placenta, situated to the left posteriorly, was delivered. The uterus was sutured with kangaroo tendon and catgut; the abdominal wall with catgut and silkworm gut. The operation took 28 minutes. The child was hydrocephalic and already dead.

Case 2. Mrs. G., age 38, white, married four years, menstruated first at 13, regular, lasted four days, not profuse. No children, no miscarriage. December, 1903, she noticed a "lump" in her lower abdomen. She was examined by Dr. Chadwick, July, 1904, who found a fibroid about as large as a cocoanut. Menstruated last, Nov. 8, 1903; after this the abdomen increased rapidly in size. I saw her first after she had missed two months, and again after three months, but could not tell if she were pregnant or not, because of the fibroid occupying the lower uterus. She thought she felt movement three and a half months after her last menstruation. July 10th, she had slight pains all night and a slight show, and until 4 A. M.; she had a very profuse hemorrhage and sent for her physician, who packed her vagina very tightly and sent her immediately to Sibley Hospital. Examination just before the flow showed a well-developed woman about forty years of age. The tumor and pregnancy reached the ensiform cartilage, and the abdomen was much larger than ordinary pregnancy. A tumor occupied the lower posterior segment of the uterus, completely blocking the pelvis. Caesarean Section

was determined upon, to be performed when she reached full term. The hemorrhage was thought to mean placenta previa, but the examining finger could not reach the cervix, as it was pushed well up above the pubes by the tumor. Caesarean Section was done after she had been prepared. The child was extracted in three minutes. The uterus was amputated at the internal os and the abdomen closed in the usual way. This operation took 32 minutes. The child was somewhat weak and did not breathe immediately, but came out all right, then died of pneumonia in three days.

Both mothers made uninterrupted recoveries.

CASE 3. Mrs. Z., white, age 24; was seen in labor, with Dr. Mackall, about six years ago. She was a stout German woman with a male pelvis. The external measurements were normal. She had been in labor about 24 hours; the head had not engaged. We applied axis-traction forceps, and after very much labor on our part delivered a dead child. The patient was torn into the rectum and the whole vagina was much mutilated. She became pregnant again and went to a hospital, but refused Caesarean Section; again she had a dead child. Two years afterwards she was delivered at seven and a half months by Dr. Reeves and myself of a small live child. The next time I found her at term with a large child whose head would not engage. I refused to have anything to do with her unless she went to a hospital and had a Caesarean Section done. She entered Providence Hospital. Caesarean Section was done, the mother and child leaving the hospital in three weeks in perfect condition.

CASE 4. Another German woman, with about the same history of having lost her children, was sent to me by Dr. Jenner. She also had the male pelvis with a sacral promontory that seemed to almost reach the pubis. The external pelvic measurements were normal. She lived near the other German woman and had heard of her successful delivery by Caesarean Section, and wanted the same operation. She entered Providence Hospital. Caesarean Section was done, the time being 17 minutes. The mother and child both did well and left the hospital in three weeks.

CASE 5. Mrs. S., white, age 20. Saw her with Dr. D. O. Leech. She had been in labor 24 hours; the cervix was fully dilated, but the head would not engage. All the pelvic measurements were small and the fetal head large and well ossified.

Although there was a possibility of this patient being infected, being in a private house, we believed her chances were better with a Caesarean Section. She entered Sibley Hospital and had a Caesarean Section. She had a mild infection, but was able to leave the hospital after four weeks, perfectly recovered and with a healthy child.

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1. M. F. Porter, *Jour. Amer. Med. Assn.*, March 21, 1909.
2. Same journal, August 29, 1908.
3. *Surgery, Gynecology and Obstetrics*, May, 1909.
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- 5 and 6. Same journal, May, 1908.

Dr. A. F. A. King said that Dr. Kelley's interesting paper considered one of the most difficult questions in the whole realm of obstetrics. The literature is so profuse and opinions are so diverse and conflicting that it is almost impossible to reach a satisfactory conclusion as to what is the elective operation in borderline cases. The question as to the absolute indication for Caesarean Section seems to have no constant answer; opinions on this subject are constantly changing, and the absolute indication as expressed in terms of pelvic measurements is constantly growing more liberal. Formerly a *conjugata vera* of from $1\frac{1}{2}$ to 2 inches was regarded as the absolute indication; now measurements as high even as 3 inches may be regarded as calling for section as a conservative procedure. Are we actually coming to the point, which Dr. King had formerly facetiously suggested, of offering the inducement of "babies extracted without pain while you wait?" Seriously, he thought it possible that the history of former protracted labors followed by dangerous puerperium will be regarded as an indication for Caesarean Section.

The main question, however, was whether the obstetrician should be a specialist. In his opinion the operation should be undertaken only by an experienced operator where such an expert may be had. But the whole world does not contain enough surgery to make enough experts, and so some of us must of necessity be bunglers for a time; but we wouldn't select a bungler, from choice, to do a Caesarean Section.

Despite the low mortality statistics of Caesarean Section, it must not be overlooked that it may have some morbidity, such as hernia, and, more especially, rupture of the uterus in a subsequent pregnancy. He believed that every woman upon whom Caesarean Section has been done should be carefully instructed to inform the obstetrician of the fact if she should ever again become pregnant.

Dr. H. D. Fry said that though he had come in too late to hear

the first part of the paper he agreed in the main with the points made in that portion which he had heard. He would call attention to the fact that the small maternal mortality is in the early cases, and that the mortality rate increases with the delay in resorting to the operation in cases which demand it. The main consideration in securing safety is early decision as to the probable necessity for the section, and an elective operation at term. But ideas as to the necessity for Caesarean Section should be very clear and distinct; rashness must be condemned, and the indications for the operation ought to be decided by a specialist. He criticized the indications for the operation reported by Dr. Kelley as given in the paper; he did not doubt that the cases actually demanded the operation, but he thought the paper should have been more specific as to the reasons. What, for instance, were the diagonal conjugates in these cases?

In cases in which the necessity for Caesarean Section may be suspected he believed that an examination of the child's head and its relation to the pelvic outlet should be made under ether about two weeks before labor is expected. Many cases will be found in which, though the pelvic measurements are abnormally small, the child's head can be readily pressed down into the pelvis, thus indicating that labor may proceed by the natural route; indeed, it is entirely reasonable to expect that a small woman with a justo-minor pelvis may have a small child. He has found in practice at the Columbia Hospital that about 50 per cent. of colored women have justo-minor pelves, but that they also have small children and the proportion of difficult labors is not higher than in white women.

Delay in recognizing the necessity for Caesarean Section is most unfortunate; he had labored under so many difficulties in this respect at Columbia Hospital that he had had made a stamp to mark on the chart of women whose measurements are below normal the word "ABNORMAL," so as to keep the intern on the alert and watchful for the necessity for interference.

The increase of the obstetric diameter from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches for the absolute indication for Caesarean Section is to be accounted for by the abolition of craniotomy as a permissible operation on a living child.

Dr. Kelley's remarks upon the death of a child, delivered by section, after too vigorous efforts at resuscitation, led Dr. Fry to remark that babies removed by section have no air hunger, as they have not passed through the birth canal with more or less prolonged pressure upon the cord; they may safely be left alone for awhile until separation from the maternal circulation has been sufficiently prolonged to occasion air hunger, when efforts at respiration will spontaneously begin.

He believed that with the safer methods at our command the high-forceps operation should be abandoned; it is the occasion

of high morbidity for the mother, and the fetal mortality after it is 33 $\frac{1}{3}$ per cent.

Caesarean Section is the operation of choice, but when the likelihood of infection is great, symphysiotomy or pubiotomy is indicated. His own preference is for symphysiotomy, because the morbidity after pubiotomy is so great and the suffering of the patient is so intense. He dislikes both operations if they are avoidable.

He believed that Caesarean Section should undoubtedly be decided upon and performed by specialists.

Dr. Kelley had not mentioned the induction of premature labor in cases of contracted pelvis; there are not many indications for this procedure, and it ought never be done earlier than the thirty-sixth week.

He differed with Dr. Kelley as to the difficulty of completing labor after symphysiotomy; in his experience, symphysiotomy and pubiotomy allow of easy extraction of the child.

Dr. Jack said that undoubtedly the need for Caesarean section was an indication for calling into the case a specially-trained man. While Caesarean Section has been called an easy operation to perform, it is easy only in trained hands. If the general practitioner, however, is well trained in the principles of asepsis, the conditions for section are very much improved. Dr. Jack prefers Caesarean Section to symphysiotomy or pubiotomy; his own experience had been limited to two cases—one of eclampsia, the other of generally-contracted pelvis.

Dr. Stavely endorsed the views expressed by the other speakers. There is no safer operation than elective Caesarean Section. He is opposed to symphysiotomy and pubiotomy; he dislikes them and would avoid them if possible. The complications are so numerous and disagreeable and are so likely to occur despite the utmost care. Obstetricians should be careful not to decide upon an elective Caesarean Section too lightly; it may often be best to wait until labor begins and see if the head will not engage, or even to apply high forceps and attempt extraction, but briefly and with little force.

Dr. Fry stated that his remarks upon the operation of symphysiotomy referred to the new subcutaneous method; the old open method met with his hearty condemnation.

Dr. Kelley said, in closing, that he had appreciated the remarks made by the various speakers. The subject was such a large one that he had been obliged to leave out many points upon which it would have been profitable to dwell. The literature of the subject is so voluminous that he had found it necessary to go back not further than two years. He wished to emphasize—

1st. Pelvic measurements are frequently misleading; the ordinary measurements must be supplemented by measurements of the child's head, and by a determination of the shape and type of the pelvis.

2d. He agreed that the high-forceps operation ought to be abandoned.

3d. If one hundred of the worst cases of difficult labor were subjected to Caesarean Section the high maternal morbidity and the 33-per cent. fetal mortality under high forceps or other old operations would be reduced practically to nothing.

THE THERAPEUTIC VALUE OF IONS.*

By P. S. ROY, M. D.,

Washington, D. C.

For therapeutic purposes it is only necessary to think of ions as electrically-charged atoms. Ions can be formed in four ways: First, by the molecule breaking down directly into an equal number of cations and anions as $\text{HCl} = \overset{+}{\text{H}} + \overset{-}{\text{Cl}}$. The second method is for an atom to take a charge from an ion, the atom becoming an ion and the ion an atom. Dipping zinc into a solution of sulphate of copper illustrates this mode of ion formation. $\overset{++}{\text{Cu}} + \overset{-}{\text{So}_4} + \text{Zu} = \overset{++}{\text{Zu}} + \overset{-}{\text{So}_4} + \text{Cu}$. A third method of ion formation is when an atom of one substance becomes a cation and that of another substance becomes an anion. Gold dipped in chlorine water expresses this change. $\text{Au} + \overset{+++}{\text{cl}} + \overset{-}{\text{cl}} + \overset{-}{\text{cl}} = \overset{+++}{\text{au}} + \overset{-}{\text{cl}} + \overset{-}{\text{cl}} + \overset{-}{\text{cl}}$. The fourth and last method by which ions are formed is when an atom passes over into an ion and at the same time makes an ion already present have a different electric charge. For illustration, take ferrous chloride $\overset{++}{\text{Fe}} + \overset{-}{\text{cl}} + \overset{-}{\text{cl}} + \overset{-}{\text{cl}} = \overset{+++}{\text{Fe}} + \overset{-}{\text{cl}} + \overset{-}{\text{cl}} + \overset{-}{\text{cl}}$. One word concerning the evidence of the existence of ions—a most direct evidence is when an aqueous solution of a salt is rotated in a centrifugal machine; there will be found an electromotor force between the outer and inner ends of the rotating solution. Again, the lowering of the freezing point of solutions at times can only be explained by the theory of electric dissociation, and, lastly, Van'tHoff's first law of osmotic pressure does not hold for electrolytes.

* Read before the Medical Society, October 13, 1909.

Keeping clear in our minds the different methods of ion formation is a great aid to understanding the value of ion therapeutics. Although the science of ion as applied to therapeutics is as yet very incomplete, we believe there are some facts worthy of our consideration. One of the most interesting and important fields in ion therapeutics is the use of electricity in carrying therapeutic ions through the skin. The therapist must be familiar with the correct use of the galvanic battery; non-metallic electrolytes enter the body through the negative pole, while the alkaloids, metals and their salts enter through the positive pole.

There are many illustrations that can be given of the use of electricity in ion therapeutics. We will give a few. Bichloride of mercury injected in the early stages of locomotor ataxia is a curative, but bichloride will give great pain and inflammation injected in an aqueous solution. Ion therapy has overcome this objection by the addition of a 1-per cent. chloride of sodium to an aqueous bichloride solution of 1 to 500. The dissociation of

the Hg^{++} ions does not occur until the ions enter the blood, and thus the caustic action upon the muscles by the Hg^{++} ions is prevented. Certain solvents much used in medicine, such as chloroform, alcohol, glycerine and vaseline, do not conduct ions, therefore in these solutions there is no dissociation of the electrolytes, and consequently the latter do not show their usual chemical properties when mixed with these solvents. This is strikingly shown by phenol when mixed with these solvents. Phenol in pure glycerine is almost noncaustic and nontoxic. Persons have been known to take a tablespoonful of equal parts of glycerine and carbolic acid without caustic effects. Alcohol is one of the antidotes for carbolic acid. A 5-per cent. ointment of carbolic acid with vaseline is not irritating, while a 5-per cent. aqueous solution of carbolic acid is very irritating.

In all acids the difference between the weak and strong acids is the dissociation of the H^+ ion. In sulphuric acid we have a high dissociation, in acetic acid a low. Hydrogen always acts as a metal, and the correct nomenclature for sulphuric acid is sulphate of hydrogen. It has been a matter of tradition that a solution of the sulphate of magnesia applied to warts would cause them to disappear. The explanation seems to come through ion thera-

peutics. Dr. Lewis Jones, of London, now uses a 4-per cent. solution of sulphate of magnesia to wet the pad of the positive electrode, which is applied to the wart, the negative pole being placed at some convenient spot. He uses a current of 5 or 8 milliampères for 15 minutes. Usually one application will cause the warts to shrivel and disappear in ten days. For neuralgia of the face Leduc applies with great success a 2-per cent. solution of salicylate of soda by means of the negative galvanic pole; the positive is placed at an indifferent point, and a current of 30 or 40 milliampères is gradually turned on for thirty minutes. We have found this mode of treatment valuable in facial neuralgia, also in neuritis and in neuralgias following Herpes Zoster. Local anesthesia, it is well known, can be obtained from cocain through the positive galvanic pole without the danger of constitutional effects. All the systemic effects of iodine, zinc and strychnia can be obtained through ion electro-therapeutics, the cation and anion following well-known laws governing them.

The increase of osmotic pressure in the body, following the use of normal salt solution and the great improvement to the circulation that follows, is in a great measure due to its ion dissociation, but this should be remembered, salt ions are toxic to the heart muscles and much better results we believe could be gotten by using the normal salt solution and normal calcium solution combined; for calcium is antitoxic to salt. The value of potassium iodide and sulphocyanate of sodium in arteriosclerosis has been explained by ion therapeutics; calcium carbonate and calcium phosphate make a firm, insoluble union with protein, while calcium iodide protein and calcium sulphocyanate protein are very soluble. These proteins, therefore, in the processes of metabolism are much more easily excreted than the former, and this explains how iodides and sulphocyanates retard the advance of arteriosclerosis. We often speak of iodides and other drugs as alteratives. Ion therapeutics seems to have given a new and intelligent explanation of the term. Pauli has brought out a most important fact concerning the part performed by alcohol in the formation of esters. For illustration, the anesthetic group in cocain is benzoylcegomine, but its anion cannot enter the nerve cells without forming an ester with alcohol; therefore, Pauli says, "Existence in the form of an ester is apparently always an indispensable condition for a useful local anesthetic." The com-

bining of metallic ions with an alcohol radical increases their activity, often causing acute metallic intoxication, and this condition has been observed when alcohol has been given with mercury, lead and zinc. We believe it is generally accepted that persons taking mercury should not use alcohol.

We have already had occasion to mention the influence of ions on osmotic pressure. Several therapeutic lessons can be learned from the study of osmotic laws; strong salt solution with a high osmotic pressure applied to the nasal cavity will cause rhinitis and injury to the nerve cells, thus producing anosmia. Pure water, either distilled or natural, with a low osmotic pressure, is very injurious to epithelial cells; distilled water will quickly injure the cells of the alimentary canal, and should never be used for drinking water. There is in the Tyrol a spring of perfectly pure water called the Giftbrunnen, which means poison spring. Its low osmotic pressure causes toxic action when it is drunk. In removing the crusts of eczema, impetigo and other skin diseases, the lower the osmotic pressure of the water the more rapidly are the crusts dissolved, and, therefore, boiled distilled water is best in dermatological work. In metabolism it is the ion, not the atom of the mineral constituents of the body, that is active in tissue changes. All the mineral elements in the body are in the most complete state of dissociation.

Russ, in the *Lancet*, London, of July, tells us that bacteria can be ionized. He particularly uses this method in looking for tubercle bacilli in certain fluids of the body, finding the galvanic current a more effective way of grouping them than by the centrifuge. Koeppe believes that buttermilk is superior to unfermented milk because of the quantity of ions in buttermilk. The theory of antitoxins seems to find its best explanation in the theory of ions. Local and general anesthesia are due to ion action. The whole problem of metabolism, we believe, some day, probably not far distant, will be made clear through the study of ions. This we do know that from the very threshold of metabolism in the alimentary canal to the most complex tissue changes, ions or, probably a better expression, electric dissociation, fulfills a most important part.

I will give some of Pauli's laws concerning ionization in the body. Pauli is one of the great workers in this new science.

"1. Protein which has been carefully freed from electrolytes shows no electrical charge.

"2. None of the albuminous constituents of blood serum show any electric charge in the absence of electrolytes.

"3. Neutral salts of alkalies or alkaline earths do not impart an electrical charge to uncharged protein.

"4. A trace of acid imparts a positive electrical charge through the positive H ions, and alkalies a negative charge through the OH ions.

"5. Alkaline salts (*e. g.*, carbonates and phosphates of alkali metals) render protein electro-negative; acid salts give a positive charge.

"The native proteins of the blood and tissues carry a negative electrical charge which is derived from OH ions split off from the salts of the serum and lymph. When bicarbonate of sodium is added to fresh non-charged protein it assumes a strong negative electric charge and becomes sodium-bicarbonate-protein."

Dr. Barton said that we should not regard ions as absolutely demonstrated entities; their existence is entirely hypothetical, but the hypothesis is the only entirely satisfactory explanation of many chemico-physical phenomena in matter. The idea, from a therapeutic standpoint, is that solutions of salts in the body are not merely watery suspensions of molecules of any particular salt, but that the molecules may be electrically dissociated, that solutions may contain active subdivisions of molecules which by their peculiar electric content are able to accomplish therapeutic results, independent of the molecules as a whole. This is a convenient and adequate explanation of differing osmotic pressures in solutions of molecularly-equal salts. The action of drugs may be said to be due to the summation of the activities of the active ions contained in their molecules. The different toxicity of potassium cyanid and potassium ferro-cyanid, for example, may be accounted for by the ionic equalization of the iron and cyanogen elements in the latter, making it a comparatively inert salt. The difference in the destructive or corrosive action of potassium hydrate and alcohol, for a second example, may be that though both are composed of a radical in combination with OH, their abilities for ionic dissociation are different.

Dr. Roy, in closing the discussion, said that he did not wish to add anything to what he had said in the paper, but he took the opportunity to thank Dr. Barton for his illuminating remarks.

JUNOD'S BLOOD DERIVATIONS.*

BY GUSTAVUS WERBER, A. M., M. D.,

Washington, D. C.

By way of preface I would say that the reason I call your attention to some ancient history in medicine is that I believe in the near future the physician will come to realize that he already knows that impoverished or vitiated, poisoned blood is the great underlying cause of disease, and that most abnormal conditions of the blood result in its imperfect circulation; and that the cure of disease, therefore, must consist in restoring the blood to its normal condition. The chronic diseases which now prove so unyielding to treatment simply resist our attempts to break the vicious circle, commencing with the imperfect depuration of the blood consequent upon the incomplete elaboration of its constituents, leading to stagnation in the circulation, and leaving the subject poisoned by his own blood. Holding this view, I hope I may be excusable in asking your serious consideration of Junod's claims for his neglected and almost forgotten method of blood derivation, which appears to me by far the most powerful and effective means ever used to correct the evils arising from an unbalanced circulation, and probably also as a means to stimulate the blood-making organs to increased activity, perhaps even to the point of restoring this function to the normal, when it has been seriously impaired.

I incline strongly to this belief from the absolute candor with which Junod tells of his results, and from the public endorsements given his method by more than fifty of his most eminent contemporary physicians, and from the known fact that bleeding a patient will stimulate the blood-making organs to increased activity. And I therefore call your attention to his work with the hope that some will be found to investigate, and give us additional facts, either to confirm or disprove what Junod claimed for his derivations; for to treat with indifference this demonstrated epoch-making discovery by ignoring it does not appear to me justifiable from the point of earnest truth-seeking. True, the technique is somewhat tedious and exacting, but this of itself is not sufficient reason why it should be repudiated by the whole profession.

* Read before the Medical Society, October 13, 1909.

VICTOR THÉODORE JUNOD took his doctor's degree in Paris, in the year 1833, and wrote his graduating thesis on the "Advantages of Haemospasia" (to draw blood), and submitted the derivators used to accomplish this end. For more than forty years he continued to make a specialty of applying his apparatus, to bleed the patient into his own vessels, and reported many brilliant cures in dangerous maladies. During this time he demonstrated his method in France, Germany, Great Britain, Italy, Austria, Spain and Turkey. In 1839 he was attached to the Paris hospitals in order to perfect his technique. In 1854 he was sent by the French government to the Department of Haut Marne, then decimated by cholera, and received a gold medal for stamping out the epidemic at that place. In 1858 the French government sent him to Algeria to study the effects of his derivations in the epidemics common in that country. Junod's writings on Haemospasia brought him the Montyon prize of the first class in 1836, and the Grand Prize for Medicine and Surgery in 1870. In the year 1843 his method was recommended to all the hospitals in France, by decree of the Minister of the Interior. Later he was awarded the gold medal at the London, Paris and New York exhibitions. Junod's method was highly praised by Magendie in his lectures at the colleges in France, and he was endorsed by other authors in their works, among whom were: Dr. Ch. Londe, Michel Lévy, Bourguery, Vidal de Cassis, Nélaton, Philippe Boyer, Bérard and Denonvilliers. His public endorsers include M. Louis Figuier, Nélaton, Velpeau, Ricord, A. Trouseau, J. Voisin, A. Labric, Gérardin, Barth, Honoré and many other well known physicians of that period, and also the public officials of France.

Junod's work comprised (1) baths of compressed air, (2) baths of rarefied air, (3) blood derivations, which he called "Haemospasia." This was his favorite operation and principal work, and it is of this only that I shall speak. These derivations were made by applying airtight receivers to large surfaces of the body, and by exhausting the air from their interior, the blood and fluids of the body were forced from the parts still under full atmospheric pressure to those parts subjected to the action of the partial vacuum, or negative pressure. The parts usually subjected to the action of the vacuum were the arms and the legs, either singly, in pairs, or all at one time. It was rarely necessary to

operate on the four extremities simultaneously, Junod's favorite operation being to apply the pneumatic boot to the leg and thigh of both lower extremities simultaneously. By means of a suitable pump the air was gradually exhausted and a partial vacuum established, usually commencing at minus $\frac{1}{4}$ atmosphere and ending at minus $\frac{1}{2}$ atmosphere. This diminution of the air pressure causes a dilation of the capillaries of the part to which the derivator is applied, and an enormous flux and engorgement of the fluids of the body were in this way brought about. With the derivator applied to the leg and thigh of both extremities he was, by means of the vacuum thereby produced, enabled to temporarily withdraw more than seven pints of blood from the circulation and imprison it in the limbs (the influence of the partial vacuum retaining it within the area covered by the derivator) from a few minutes to several hours, according to the condition of the patient and the nature of the offending cause; Junod observing that the most prolonged derivations often proved the most effective.

With such an application Junod noted that it usually required about an hour to draw enough blood from the circulation to cause fainting, and this was interpreted as a physical sign that his remedy had been applied "to effect." When the derivation was made simultaneously on both arms and legs, of course a proportionately larger quantity of blood was withdrawn from the general circulation and imprisoned, while from this double derivation it was noted that fainting almost invariably followed in any condition.

Junod claimed for this operation the lowering of the internal and external temperature of the body, causing abundant perspiration; the cure of diseases characterized by inflammation, and that it afforded invariable relief for local congestion; also that by a timely application fever was aborted, and that it quieted even the wild delirium of mania. He taught that his derivations had a rapid sedative effect, which is very useful in the treatment of many cerebral, thoracic and abdominal affections; also that they were attended by abundant and continuous perspiration, which plays a critical part in the treatment of certain affections. Junod's derivations usually produced sleep, or at least a calm, placid condition. Inflammation is subdued by relieving pressure, and more especially that affecting the nerve centers. Profuse

perspiration after haemospasia, denotes salutary crisis, from influencing the nervous system and that a kind of counter stimulation is established which quiets the action of an excited heart, and disperses inflammatory congestions. This critical sweat kept up in many cases for twenty-four hours or more, and was regarded as a valuable process to cleanse the blood of pathologic products inimical to health. By diminishing the mass of fluid in circulation Junod hastened the absorption of serum in other parts of the body, to overcome this constantly diminishing blood pressure induced in the larger bloodvessels. The renal and intestinal secretions were increased, and in many instances, he says, as much as though diuretics and purgatives had been administered. Junod states that it is certain that in most cases his derivations, employed with persistence and moderation, act successfully by the renewed impulse they give to the circulation in combatting sanguineous stagnation if there is either active or passive congestion, and reestablishing the equilibrium between the contending forces of composition and decomposition if there is a defect of nutrition.

We have here a hint that his derivations stimulate to increased activity the physician's time-honored ally, the *vis medicatrix naturae*, but he gives no additional suggestion on this point.

The indications he lays down for his derivations are as follows: all congestions and inflammatory conditions, hemorrhages (internal and external), neuralgia, nervous affections, morbid growths of any kind (but he lays no claim to favorably influencing cancer, tubercles or organic degeneration), meningitis, pneumonia, pleurisy, serous effusions following meningitis, pericarditis and peritonitis, or ascites from engorgement of the abdominal viscera, uterine hemorrhages, facial neuralgia and toothache, congestion of the brain, dropsies, obstinate insomnia, delirium tremens, chorea, mania, and, in fact, all nervous affections which are not the result of organic disease.

In his "Theory and Practice of Haemospasia," published in 1875, Junod gives the histories of 293 cases in which his operation is shown to have accomplished wonderful results. In the histories given, mania in several forms was cured, apoplexy causing paralysis of various organs—and he usually restored *at once* the power of speech and movement—aphasia, complete paraplegia, cerebral congestions with various complications, meningitis,

numerous brain affections, many nervous and neuralgic affections, eclampsia, opisthotonos, hysteria in its worst forms, epilepsy, convulsions, neuralgias and sciatica were cured. Affections of the eyes and ears of a serious nature were cured by his derivations. Many chest and pulmonary affections, as edema of the glottis, croup, laryngitis, bronchitis, pleurisy and symptoms of pulmonary phthisis were alike cured. In pneumonia his results were brilliant, congestive affections of the heart yielded readily, cardiac asthma, angina pectoris and peritonitis were cured.

Under the relaxing influence of haemospasia intestinal occlusion gave way, and strangulated irreducible hernias and dislocation of bones were readily reduced. In uterine affections his results were no less brilliant than in brain affections, metrorrhagia, dysmenorrhea, amenorrhea, were readily cured, and usually with one or two derivations. Of the urinary organs, nephritis, acute and chronic cystitis were cured. Under general maladies, he reports cures of cholera in all stages, typhoid fever with numerous complications, intermittent fever, rheumatism and gout. Surgical cases dependent on congestion were cured or materially benefited. In his records Junod gives the names of many physicians having a knowledge of the facts, and, taking into account the well-authenticated cures of such an array of diseases, I think you will agree with me that the work of this painstaking, earnest, original investigator is well entitled to practical recognition at the hands of our profession.

One phase of this operation appears to me a simple question in hydraulics, in which the stagnant pools of the body are drained and the poisons causing disease are flushed out of infected areas by the flowing tide of new blood. And that Junod's derivations *would* cure many diseases seems quite likely, from the fact that it appears to meet the requirements of the last three schools—the Humoral teaching that the cause of disease resides in the blood, and the Cellular that it resides in the tissues, and of the Modern school, which teaches that certain diseases are caused by noxious germs. Modern pathologists teach that the blood carries antibodies and antitoxins which disable invading germs preparatory to their final annihilation by the leucocytes. Now when the disease-producing germs become intrenched in the tissues, the battle is made short and decisive, in proportion to the ability of the circulation to bring upon the battle field the required de-

fensive proteids of the body. Drain the fluids from the tissues and you remove the soluble poisons, and perhaps some of those not in solution, by mechanical displacement, causing leucocytosis. Perhaps wandering leucocytes are by this means returned quickly to the circulation. I fancy when Junod reduces the pulse to a thread he sends a signal of distress to every cell of the body outside the area of the vacuum to hurry on its quota of fluid to sustain the failing circulation, and, the imprisoned blood being mainly arterial, that a powerful *aspiration*, in effect, ensues to draw fluids to the heart and large arteries. When the derivators are removed *reaction* sets in, and the new blood flowing into the tissues carries fresh supplies of the defensive proteids of the body to check invasions, and food to restore health and strength.

When Junod removed enough blood from the brain to suspend the action of the conscious mind I suppose he necessarily lessened the power of the brain to supply nerve impulse to the body through the spinal cord. Just here Junod's investigations stopped, and I think it may prove profitable for our investigations to continue the study to ascertain just what happens when the conscious mind is held in abeyance.

The work of Junod has stimulated the development of the cupping glass described by Celsus, which is used for making derivations on a smaller scale, and in many cases with the sole object of producing hyperaemia. The principle laid down by Junod, that the most prolonged derivations are generally the most effective, I conceive to be a correct one, and the vacuum cups which I show you were designed to accomplish this result. Hence their much larger cubic capacity than cups formerly used for this purpose. These cups are made in five sizes with a capacity of about 17, 40, 84, 97 and 132 cubic inches. Cups of smaller capacity are now supplied by the instrument makers which *redde[n] the skin beautifully*, but the degree of vacuum cannot be regulated with the nicety required to fill the deeper vessels with blood. These cups have been used with encouraging results in the treatment of locomotor ataxia, neurasthenia, congestion of the brain, indolent ulcers and incipient gangrene, and in general are beneficial wherever local hyperaemia or a derivative action in a circumscribed area is desirable.

The general indication for their use is the gradual reduction

of the vacuum ending at from minus $\frac{1}{3}$ to minus $\frac{1}{2}$ atmosphere, and, if retained in place from fifteen to twenty minutes, the application generally suffices to fill the deeper vessels.

Dr. Nichols said that various methods of manipulating the circulation had occupied the attention of physicians many times in the history of medicine. He asked Dr. Werber if Junod's derivations did not accomplish about the same things as bleeding, and if there was any direct historical connection between Junod's method and the practice of phlebotomy, which was on the wane at about the time Junod was before the public. Also, he asked if there is any historical connection between Bier's hyperemic treatment and Junod's derivations.

Dr. W. P. Carr was much surprised to learn of a method by which so much blood could be taken from the general circulation and still held within the body, the chief element in his surprise being that the method should have so utterly fallen into obscurity. He had at first been inclined to doubt that enough blood could be attracted to and confined in the legs to produce syncope; but that Junod frequently did it seems well authenticated, and Dr. Werber himself had approximated it. The method commended itself to Dr. Carr as valuable in cases such as apoplexy, in which the bleeding is still going on; or in any kind of internal hemorrhage. It seemed possible by the derivators to take half the blood out of the general circulation and dam it up till needed. It seemed likely that the method would be beneficial in cases of serous effusion—to promote absorption. In cases of pneumonia bleeding often will give relief, but the blood is needed later on. By Junod's method we may attain all the advantages of bleeding and still keep the blood to feed into the circulation when needed, as at the crisis. The method, also, seemed to have been successfully employed in the treatment of inflammations. Here we are in deeper water in attempting explanation; but he was able to see in it all the advantages of Bier's method, with additional good. First, the derivations served to exhaust all the vitiated blood from the parts affected, at the same time causing a stimulation of the local cells; then, on removing the apparatus, a secondary congestion of good blood would be determined to the part. A possible theory presented itself that the method might promote the throwing out of antitoxins by the leucocytes; certain observers have been able to see minute globules extruded from the body of a leucocyte under the stimulus of toxins of one kind or another; it seemed possible that this extrusion of antitoxic bodies might be facilitated by the relief of atmospheric pressure by the derivations. He merely suggested that as an interesting possibility. If Junod's derivations were of no further use, he

thought the method would be very valuable to lower the blood pressure in internal hemorrhage.

Dr. Hooe asked Dr. Werber how Junod measured the quantity of blood he was able to imprison in the legs. Also how much pain is occasioned by the derivations.

Dr. E. P. Magruder said that he had seen the patient presented by Dr. Werber, when the former came to Emergency Hospital for the reduction of strangulated scrotal hernia. The intestinal part of the hernia was easily reduced, but what was taken to be an omental portion was, reduced with difficulty; he was put to bed, and the following morning left the hospital; both portions remained reduced. He presumed that the mass which Dr. Werber regarded as a third testicle was the mass which at the hospital was taken to be omental.

Dr. E. L. Morgan said that the psychic effect of Junod's treatment in certain cases must be taken into consideration in discussing this valuable contribution to medical science.

In other diseases, not strictly pathological, he obtained brilliant results, along lines of mental impression, just as were obtained by the ancients and our modern doctors and healers by various methods and under several systems or names, such as sacred shrines, relics, wells, springs, by means of the ancient practice of "pythonism," "faith cure," "Eddyism," Emmanuel movement," "metallotherapy," Perkins' "metallic tractors," "Haygarth's wooden cylinders," and so on down a long line of fads and fashions. The presence of Dr. Junod, his reputation, his instruments, and application thereof, doubtless made a deep impression on the patient. The vast array of human evidence given by the practitioners and patients and others is appalling to behold, both in the past and present. Such is the infallible testimony of man (ironically speaking) and his credulity. Under certain conditions and in certain cases persons are cured by mental process, or psychic means. That Junod did make cures or benefited his many patients is not to be doubted, even in pathological conditions, to say nothing of functional cases. To many it may seem strange that so valuable an addition (as claimed) in the treatment of disease should have been lost to the profession all these years. This is not strange when one looks into the ancient history of medicine. For instance: take the first application of the silk ligature to bleeding vessels, as claimed by Ambroise Paré's admirers (1509-1590 A. D.) that he first ligated arteries. Celsus, Avicenna, Albucasis and other ancient and medieval surgical authors had spoken of the ligation of bloodvessels, and yet for ages previous to Ambroise Paré the actual cautery was used. Paré says: "I think it was taught me by the special favor of the sacred Deitie; for I learnt it not of my masters, nor of any other, neither have I at any time found it used by any." One author says that Paré may have been inspired by the ancient

writings, since Paré said : "Only I have read it in Galen that there was no speedier remedy for staunching of blood than to bind the vessels through which it flowed towards their roots, to wit, the liver and the heart."

To illustrate again, take, for instance, the evolution of the forceps. Hippocrates used an instrument to remove the fetus from the mother; Soranus had seven instruments for craniotomy, among which was a hook. Celsus had a similar instrument, and in Pompeii such hooks were found among other instruments. In the eleventh century the Arabian obstetrician Avicenna employed hooks. In 1554 Jacques Rueff, of Zurich, invented a forceps. Chamberlen (1601-83) invented forceps, etc. Why were these instruments practically forgotten and not in universal use in Europe previous to Chamberlen's time?

We bleed patients by various methods and into their tissues. The old-time bleeding in certain cases could be practiced today with advantage to patients. This treatment, of Junod's method of bleeding into limbs, etc., is of value and worthy of consideration.

Dr. Werber replied to Dr. Hooe that Junod measured the quantity of blood attracted into the legs by his instruments by filling these with water and then measuring the quantity displaced. It must be admitted that the operation is somewhat painful, a circumstance which may account for the unpopularity into which the method fell. The pain is especially marked in the loose tissues of an extremity, but the discomfort will be slight if the apparatus is exhausted slowly.

He replied to Dr. Nichols that the method had been devised during the days of phlebotomy, and that Junod was often called to make his derivations in cases in which the patient was too weak to lose blood; other patients treated by phlebotomy without relief were afterwards cured by haemospasia. He became convinced by numerous cases of this kind that his method did more good than phlebotomy and no harm. In Dr. Werber's opinion, Bier's hyperemic method is but Junod's idea used over, with some of the good points left out.

Dr. Morgan's idea that Junod's results may be due in part to suggestion should be carefully investigated. Junod calls fainting the "leipothymic" (soul leaving the body) stage of his operation, meaning that the normal dominating control is for the time removed from the body, but he nowhere hints that a beneficial substitution for the time may be the result. I can conceive how the cerebro-spinal nervous system might be stimulated to put forth herculean efforts to retain its normal control of the body, and that this struggle might through reflex action cause the sympathetic nervous system to rush to the rescue, and, being better supplied with blood, it might surge up powerfully to exert a very unusual influence over the body.

CASE OF SYPHILIS OF LIVER AND OTHER
ORGANS.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

Mulatto woman, age 26; had had rheumatism; no history of syphilis; one sister had heart disease. In February, 1909, patient had right-side pleurisy and pain in left side, with palpitation of heart and was unable to lie down. Admitted to hospital March 15, 1909, and died May 13th; had dyspnea, cough, some heart trouble; feet swollen, although the swelling afterwards disappeared.

While in hospital her temperature was about normal, except for a few days, in which it rose to 101; her pulse was at first 144, then fell to 100, for a few days rose to 120, then fell again to 100. The respirations at first were 40, then fell to and remained at 30. The urine varied from 1,027 to 1,005; sometimes acid, at others alkaline, with albumin and hyaline casts.

At the autopsy the lungs were found edematous; some old adhesions; a chalky nodule in the upper lobe of the right lung, which doubtless indicated old tubercle. Heart enlarged, left side dilated, aortic valve ulcerated and deformed; a shallow ulcer also on the mitral valve; these were probably of syphilitic origin. There was a subphrenic abscess; its walls were constituted by the stomach, liver, spleen and diaphragm; the abscess was well walled off and contained a slough. The liver was enlarged, cirrhotic, fissured, firmly adherent superiorly; on section showed gummata, as demonstrated by the microscopical examination made by Dr. J. S. Neate, of the Army Medical Museum. The kidneys were large and tough; capsule adherent to substance; color, dark red; also probably syphilitic.

Although no external evidence of syphilis was noted there would seem to be no doubt as to the syphilitic origin of the lesions of the liver, heart and kidneys.

With regard to the subphrenic abscess the cause was not found; an interesting question is whether it might not have been due also to syphilis, but, if so, through what connections? None of the usual causes of such abscess was found in the case reported.

* Reported, with specimens, to the Medical Society, October 13, 1909.

Perhaps the best recent monograph on subphrenic abscess is that of Barnard, in the *British Medical Journal*, 1908, Vol. I, pp. 205, 371 and 429. He analyzed 76 cases, recorded on books of the London Hospital. Of these one-third were caused by gastric ulcer; one-sixth by diseased appendix; another sixth by hepatic abscess; and the remaining third were divided up among duodenal ulcer, rupture of intestine, pyosalpinx, pyemia, suppurative cholangitis, pneumonia, splenic infarction, cancer of stomach or pancreas, typhoid fever, parturition, abscess of kidney, perforation of ureter, disease of vertebra, perforation of common bile duct, suppurative pancreatitis, wounds and operations.

The micro-organism that caused the abscess in the case reported was not determined. In the 76 cases analyzed by Barnard the organism was determined in only 12; the colon bacillus, typhoid bacillus, pyocyaneus, pneumococcus, staphylococcus and streptococcus. In some, and perhaps many, of these abscesses the pus is sterile and the organism cannot then be determined.

CASE OF ANOMALOUS ORIGIN OF THE RIGHT SUBCLAVIAN ARTERY.*

By W. G. OWEN, M. D.,

Washington, D. C.

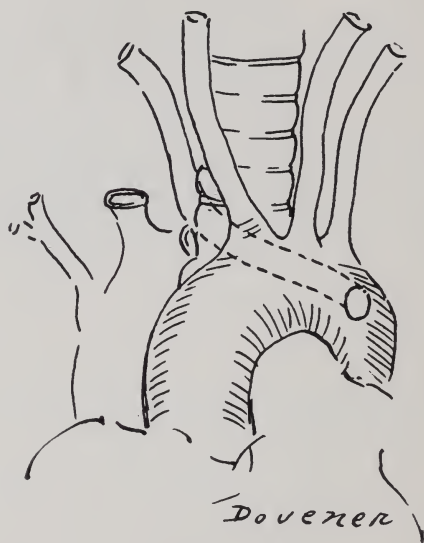
The specimen consisted of a portion of the thorax, showing the right and left common carotid and left subclavian arteries arising from the transverse portion of the arch of the aorta, in the order named; the right subclavian arose from the back part of the descending portion of the arch and, passing behind the trachea and esophagus, reached its usual place on the right side.

The specimen was obtained from the body of an elderly woman that was in process of dissection in the Medical Department of George Washington University, Washington, D. C., by Medical Students J. A. Rollings and Albert E. Pagan.

Piersol writes as follows: "A frequent anomaly is the com-

*Reported, with specimen, to the Medical Society, October 20, 1909.

plete persistence of the distal portion of the right aortic arch associated with the disappearance of a greater or less portion of its proximal part, the result being the apparent origin of the right subclavian artery from the descending aorta, whence it passes to the right behind the trachea and esophagus. Variations of this condition depending on the portion of the right arch, may modify the relations of the right vertebral and subclavian arteries. Thus, in some cases the vertebral may arise as in the



normal arrangement from the subclavian, or it may, as it were, change positions with the subclavian, arising from the descending aorta, while the subclavian arises in common with the right carotid from an innominate stem; or the vertebral may arise with the right common carotid from the innominate stem, the subclavian alone coming from the descending aorta."

Dr. D. S. Lamb said that the anomaly was no doubt dependent upon a developmental cause; such abnormalities of origin and course of blood vessels are always interesting from an anatomical standpoint. From the surgical viewpoint, a condition such as existed in the specimen might prove embarrassing.

BACTERIAL INOCULATIONS IN THE PROPHYLAXIS
AND TREATMENT OF TYPHOID FEVER.*

BY JOHN BENJAMIN NICHOLS, M. D.,

Washington, D. C.

HISTORICAL.

As early as 1893 Fraenkel tried the injection of bouillon cultures of typhoid bacilli, killed at 61-63 C., in the treatment of typhoid fever, and reported the results in fifty-seven cases. General improvement was noted as being produced by the treatment, but the method was not followed up.

Haffkine's methods of preventive inoculation against cholera, by injecting killed and living cultures of cholera spirilla, first suggested the idea of employing similar methods for prophylaxis against typhoid fever, and about 1896 Pfeiffer experimented along this line with injections of killed typhoid bacilli. The present development of antityphoid inoculation is mainly the outcome of the work of Sir Almroth E. Wright, who began his investigations in 1896, as the result of personal suggestions from both Haffkine and Pfeiffer. Wright made his first typhoid inoculations in two men in July and August, 1896, recording the fact incidentally in an article on another subject published in the *Lancet* for September 19, 1896. Pfeiffer and Kolle made the first report on their investigations of the blood changes following injection of typhoid bacilli in animals and men in the *Deutsche Medicinische Wochenschrift* for November 12, 1896. In the *British Medical Journal* for January 30, 1897, Wright made a more definite report on his investigations.

Preventive inoculations were soon afterward made in the British soldiers in India, and in the Boer War—1899-1902—the method was employed on a large scale, about 100,000 inoculations being made, with a claimed reduction of the incidence of the disease of about one-half. Opposition developed to Wright's inoculations, and in the latter part of 1902 they were discontinued in the British army. Wright at this time resigned his connection with the British Army Medical School at Netley. The subject was further investigated by another commission, under

* Read before the Medical Society, November 3, 1909.

Lieut. Col. W. B. Leishman, of the British Royal Army Medical Corps, which confirmed Wright's methods, and since 1904 the antityphoid inoculations have been practiced on a large scale in the British Colonial army. Wright was knighted in 1906 in recognition of his services. The inoculations were also practiced on a large scale in the German army in Southwest Africa from 1904, and in 1908 were introduced in the United States army.

Much more attention has been given to typhoid inoculations for prophylaxis than for treatment of the developed attack; but the therapeutic use of the vaccine has recently been attracting attention, and during 1909 a number of contributions on this phase of the subject have been presented.

The subject of antityphoid inoculation may be considered under three aspects, namely, its diagnostic, its prophylactic, and its therapeutic use.

DIAGNOSTIC TYPHOID INOCULATION.

Ocular and cutaneous tests with extracts of typhoid bacilli, entirely analogous to the corresponding tests with tuberculin, have been tried for diagnostic purposes in typhoid fever.

An ocular test was introduced by Chantemesse in 1907, and further reports on its use have been made by a number of observers. The method consists in introducing into one eye a drop of a watery extract of typhoid bacilli, or of the alcoholic precipitate therefrom; the appearance of congestion or inflammation in the inoculated eye in 6 or 8 hours, and continuing for 24 to 72 hours, is an indication of the existence of typhoid fever. The observers in general in a large number of typhoid cases obtained positive reactions in nearly every instance, while in non-typhoid cases only an occasional reaction developed.

During the past summer I prepared a watery extract of typhoid bacilli (not from a strain of proven virulence), of a strength of 2,000 million to the cubic centimeter, and applied the test in a few cases. While I obtained a positive result at some stage of the disease in most instances, the difference between the two eyes that constituted a positive reaction was usually so slight that the method seemed of little reliability for diagnosis. The most marked reaction of all was given in a case of miliary tuberculosis.

The cutaneous test for typhoid fever is performed after Von

Pirquet's method, by applying a typhoid-bacillus extract or suspension to a slight abrasion of the cuticle. The reports of the few who have tried the method are not very encouraging as to its usefulness.

THE VACCINE.

The typhoid "vaccine" or bacterial suspension used for subcutaneous injection for prophylactic and therapeutic purposes consists of either a 24 to 48-hour bouillon culture of typhoid bacilli, or a suspension in about 0.85 per cent. NaCl solution of the bacilli grown for 24 to 48 hours on the surface of agar. The bacilli and any contaminations are killed by heating for one hour at 53 to 60 C., after which 0.25 per cent. of liquor cresolis compositus, or "lysol" (practically equal parts of cresol and soft soap), is added. As the cresol alone will kill all bacteria and spores within five days the heating could be dispensed with, probably with advantage to the efficiency of the vaccine. Sterility is tested and assured by cultures and animal inoculations. The bacteria in the suspension are then counted and the preparation made up to some standard strength, conveniently 1,000 million germs to the cubic centimeter.

The strain of typhoid bacilli used for making the vaccine appears to be a matter of indifference, virulent strains not having been found to yield results more efficient than attenuated strains. For therapeutic purposes autogenous vaccines might in some cases be advantageous. The time for which the vaccine retains its potency unimpaired has been variously estimated at from three months to two years.

PROPHYLACTIC ANTITYPHOID INOCULATION.

The technic of preventive inoculation against the development of typhoid fever consists in the subcutaneous injection, in the arm or other convenient locality, of two doses of vaccine, ten days apart, the first of about 500 million, the second of 1,000 million killed typhoid bacilli. A third inoculation of 1,000 million, after another interval of ten days, is sometimes given, and undoubtedly augments the protection conferred. Three doses are apparently sufficient to confer the maximum protection. The dosage employed by Wright is 750 to 1,000 million for the first and 1,500 to 2,000 million for the second dose.

The injection of the vaccine in the doses mentioned usually

produces local and general symptoms, sometimes quite severe. At the site of injection appears in a few hours a diffuse area of swelling, induration, redness, and tenderness. This increases, reaching a maximum in 24 to 48 hours. These local phenomena are accompanied by constitutional symptoms, such as fever, pains, vomiting, malaise, prostration, etc. In the course of a couple of days more the symptoms, both local and general, subside and disappear. The reaction varies in intensity in different cases, ranging from slight soreness at the point of injection to a generally swollen arm, exquisitely tender, presenting the appearance of an angry case of cellulitis, which, however threatening, usually promptly subsides.

Following the injections the specific antibacterial properties of the blood are developed or augmented to a high degree. The agglutinative, bactericidal and bacteriolytic activities of the blood serum against the typhoid bacillus are very greatly increased, partially after the first injection, much more after the second. These antibodies begin to appear most markedly about seven to nine days after the injections. Leishman found agglutination developed to a potency manifested in a dilution as high as 1 to 4,000; bactericidal power trebled or quadrupled; bacteriolytic power increased up to ten times normal. He found an increase of the stimulins, but was unable (by the methods employed by him) to demonstrate any effect on the opsonic power. Wright found an increase of the opsonic index from the injections.

These demonstrable antibodies are often developed to a greater degree and persist for a longer time from the bacterial injections than from an attack of typhoid fever itself. As the protection conferred by an attack of the disease is greater than that derived from the inoculations, it would appear that there are other essential factors involved in acquired immunity against the disease than those capable of determination by present laboratory methods.

Wright and others claim to have demonstrated the occurrence, for a few days after the injections, of a negative phase, during which there is increased susceptibility to the disease. Leishman and others have been unable to find evidence of such a phase. This is an important practical point, as, if there is a negative phase, inoculation at a time of exposure to the infection might increase the liability of contracting it.

Statistics from which we are enabled to form some judgment of the amount of protection conferred by the inoculations are afforded by the experience of the British and German Colonial armies, as follows :

	<i>Inoculated.</i>	<i>Uninoculated.</i>
Boer War, 1899-1902 : (1)		
Number of individuals,	19,069.	150,231.
Cases of typhoid fever :		
Number,	226.	3,739.
Incidence per thousand individuals,	11.9	24.9
Deaths from typhoid fever :		
Number,	39.	...
Rate per hundred cases,	17.3	25.
Fatalities per thousand individuals,	2.04	6.23
German South African troops, 1904-'06 : (2)		
Number of individuals,	7,287.	9,209.
Cases of typhoid fever :		
Number,	371.	906.
Incidence per thousand individuals,	50.9	98.4
Deaths from typhoid fever :		
Number,	24.	116.
Rate per hundred cases,	6.5	12.8
Fatalities per thousand individuals,	3.29	12.60
British Colonial Army to June 1, 1908 : (3)		
Number of individuals,	5,473.	6,610.
Cases of typhoid fever :		
Number,	21.	187.
Incidence per thousand individuals,	3.8	28.3
Deaths from typhoid fever :		
Number,	2.	26.
Rate per hundred cases,	9.5	13.9
Fatalities per thousand individuals,	0.37	3.93

The conditions during the Boer war were not favorable to the collection of satisfactory statistics, and the figures given by different authorities disagree ; but the claims of Wright and the above figures given by McCrae indicate a reduction of typhoid morbidity and mortality similar to that in the other statistics.

(1) T. McCrae, Osler's *Modern Medicine*, II, 207.

(2) P. Kuhn, *Deutsche Militäerärztliche Zeitschrift*, 1907, XXXVI, 312.

(3) W. B. Leishman, *Journal Royal Army Medical Corps*, 1909, XII, 163.

An examination of the figures shows that the incidence of typhoid fever in the inoculated, as compared with the uninoculated (the two sets of subjects being exposed to like conditions), was reduced to about one-half in the Boer and German campaigns, and in the recent British army experience to one-seventh. Not only is the typhoid morbidity much lessened, but the disease, when contracted by the inoculated subjects, runs a milder course, so that the total mortality rate for the inoculated was reduced in the Boer War to about one-third, in the German experience to about one-fourth, and in the recent British experience to less than one-tenth of that for the uninoculated.

Furthermore, if from the statistics were eliminated the cases inadequately inoculated (that is, those receiving only one injection or injected with vaccine later found to be of questionable efficiency), the showings would be still more favorable.

Experience therefore shows that under conditions of peace, with proper methods, antityphoid inoculation may be expected to reduce morbidity at least six-sevenths and mortality nine-tenths.

As to the duration of the protection, no final estimate can yet be made. Kuhn, from the German experience, concluded that the immunity was lost after about a year. Reinoculation every two years or on exposure to infection has been recommended by others. Evidences of the persistence of the protective antibodies in the blood for as long as six years after inoculation have been observed; but this does not show how much real resisting power is preserved.

THERAPEUTIC INOCULATION.

Aside from the contribution of Fraenkel, sixteen years ago, bacillary injections for the treatment of typhoid fever have been tried only very recently, and all the reports of actual cases have been published within the present year (1909).

C. Birt, in 1906,* from theoretical considerations, suggested the use of daily injections of 10 million killed typhoid bacilli for the treatment of typhoid fever, but reported no cases actually so treated.

A case reported by W. S. Crosthwait in 1908† is of interest in

* *Journal Royal Army Medical Corps*, VII, 271.

† *Journal Royal Army Medical Corps*, X, 87.

this connection : that of a soldier who, the day following a prophylactic injection of the vaccine, sickened with a mild attack of typhoid fever, which lasted fifteen days, and was followed after seventeen days of apyrexia by a relapse and attack of pneumonia.

W. H. Watters, C. A. Eaton, E. E. Allen, J. H. Moore and N. M. Wood,* of Boston, report a total of thirty-five cases of typhoid fever treated with one to five injections each of from 15 to 60 million dead bacilli, given at intervals of several days. The inoculations were believed in most of the cases to have produced very favorable clinical results and to have markedly shortened the duration of the disease. There were two deaths.

On January 27, 1909, Dr. S. Ruffin† reported to this Society a case of typhoid fever with very prolonged course, in which the injection of 800 million bacilli produced a sharp febrile reaction, followed by subsidence of the pyrexia.

A. B. Smallman‡ reports results of vaccine treatment of thirty-six cases, with three deaths. He noted improvement in the general conditions, and an unusual absence of prolonged cases, complications, sequelae and relapses ; no bad effects were observed. He found an initial rise of temperature after the injections, followed by a progressive fall for three or four days. He used large doses, 300 million and upward, repeating and increasing every three days if no effect was produced, or after the effect of the previous dose was lost.

D. Semple§ reports treatment of nine cases, mostly receiving three or four injections each, daily or with intervals of one or two days. In seven cases the doses were 6 to 12 million, in two cases 30 and 40 million. Two of the cases received autogenous vaccines, with especially favorable results. Improvement followed most of the injections. One case was severe, one complicated with bronchitis ; otherwise the cases were mild or moderate, and uncomplicated ; no deaths occurred.

These reports are all favorable to the method, but show great diversity in the size and frequency of the doses.

During the past summer I tried the inoculation method on eleven typhoid patients in Freedmen's Hospital, and although

* *Medical Record*, January 16, 1909, LXXV, 93 ; *New England Medical Gazette*, January, 1909, XLIV, 17-20 ; *Boston Medical and Surgical Journal*, April 22, 1909, CLX, 508.

† WASHINGTON MEDICAL ANNALS, 1909, VIII, 77.

‡ *Journal Royal Army Medical Corps*, 1909, XII, 136.

§ *Lancet*, June 12, 1909, 1668.

the cases were few and the results inconclusive I present them as a contribution to the subject. The clinical summaries are as follows :

1. Female, colored, age 18. Injections (3): 11th day, 150 million; 15th day, 300 million; 19th day, 200 million. Duration of pyrexia, 22 days. Each injection was followed within a few hours by a marked rise of temperature. The case pursued a mild course, without complications. Ocular typhoid reaction faint on 18th day.

2. Female, colored, age 46. Injections (4): 11th day (approximately), 200 million; 14th day (approximately), 350 million; 18th day (approximately), 500 million; 23d day (approximately), 600 million. Duration of pyrexia, about 25 days. The temperature was markedly intermittent. The case ran a mild course, without complications. Ocular reaction positive on 11th day.

3. Female, colored, age 19. Injections (4): 8th day, 150 million; 11th day, 200 million; 15th day, 300 million; 23d day, 400 million. Duration of pyrexia, 31 days. The case was of moderate severity, and there was wild delirium during most of the febrile period, with bedsores. Ocular reaction negative on 8th day, faint on 15th day.

4. Female, colored, age 21. One injection of 300 million was given on the 9th day. Intestinal hemorrhage occurred on the 12th day. The primary febrile period lasted 16 days, and after an interval of apyrexia of 11 days there was a 16-day relapse. No distinct Widal reaction was found at any time. During the periods of fever, prostration was marked. Ocular reaction negative on 10th day.

5. Female, colored, age 26. Admitted on 16th day, received one injection of 300 million on the 17th day. Pyrexia ended on 21st day. Mild case, without complications.

6. Male, colored, age 26. This patient was brother to the preceding patient. He sickened with typhoid fever on the same day that his sister did, and was admitted to hospital at the same time with her. Not coming under my care he did not receive an injection until near the end of defervescence, on the 33d day, when 300 million were injected. The fever continued 34 days in all. There were no complications. The injection was given so late that it could have little or no effect on the case, but the case is

interesting for comparison with his sister's, who was inoculated early and whose fever lasted only 21 days.

7. Male, colored, age 20. Injections (4): 10th day, 300 million; 19th day, 400 million; 23d day, 400 million; 29th day, 400 million. Duration of pyrexia, 33 days. The case was rather mild, and there were no complications. Ocular reaction negative on 23d and 35th days, faint on the 9th day of apyrexia (42d day of disease).

8. Male, colored, age 24. Four injections of 300 million each were given on the 7th, 11th, 14th and 18th days. The febrile period lasted 20 days, and after 5 days of apyrexia there was a relapse of 18 days' duration. Three injections of 50 million each were given on the 3d, 5th and 7th days of the relapse. The case was of moderate severity, without complications. Ocular reaction positive on 18th day.

9. Male, colored, age 17. Received 11 injections of 50 million each every other day, from the 14th to the 34th day of the disease. This patient, on admission, was very ill, with marked prostration, toxemia, tympanites, severe bronchitis and otitis media (deafness). In the course of ten to fourteen days these steadily subsided, and in the latter part of the illness his general condition was very good. The pyrexia was prolonged, lasting 45 days. Ocular reaction negative on 20th day, positive on 27th day.

10. Male, colored, age 23. Received 8 injections of 50 million each every other day, from the 10th to the 24th day. The duration of the pyrexia was 24 days, and the case was a mild one. There was a slight relapse lasting 9 days. Ocular reaction positive on 14th day.

11. Male, colored, age 17. Received 9 injections of 50 million each every other day, from the 8th to the 24th day. He was very ill on admission, with marked prostration, toxemia, nervous symptoms, stupor and tympanites. Otitis media (otorrhea) developed about the 20th day. Improvement was slow, and the febrile period was prolonged to 40 days. Ocular reaction negative on 10th day, very faint on 17th day.

Summary: Eight of the patients were injected after the method of Smallman, with from one to four large doses (150 to 600 million) each, at intervals of several days, according to the course of the case. One case was complicated with wild delir-

ium, one with intestinal hemorrhage and relapse, one with a relapse, two were prolonged to 31 and 33 days; aside from these, the cases were mild to moderate, and uncomplicated. There was no uniform effect of the injections on the temperature, and in most instances the temperature course seemed unaffected. Only one injection (300 million) was followed by any notable local reaction or marked soreness at the site of inoculation. The reactions seemed less than would be expected after similar injections in healthy subjects. No bad results from the inoculations were apparent. No effect on the clinical conditions, in the way of either improvement or aggravation of the symptoms, was definitely demonstrable. The patients did very well, but that may have been coincidental.

Three patients were treated by a different system—smaller doses at regular and frequent intervals—that is, 50 million every other day. One was a mild case of 24 days, with a slight relapse. The other two were very ill on admission, and had prolonged febrile courses of 45 and 40 days; but the improvement in one of these cases was so satisfactory that if the injections could be credited with the result the usefulness of the treatment would be confirmed.

The results in the whole series are quite inconclusive. They probably show that typhoid vaccine, even in quite large doses, produces no harmful effects; but to what extent the favorable course in most of the cases was effected by the inoculations is indeterminate. Relapses certainly were not prevented.

To enable a final estimate to be formed of the therapeutic usefulness of injections of dead typhoid bacilli and to determine the proper size and frequency of the doses will require the observation of large series of cases, with untreated controls for comparison, and a study of the blood changes effected.

Localized Typhoid Infections.—The vaccine method has never seemed so well adapted to acute febrile cases as to chronic localized infections. The inoculation method would therefore seem to be promising for the treatment of post-typhoid complications due to localized infections with the typhoid bacillus.

S. T. Irwin and T. Houston* report a case of cystitis due to typhoid bacilli seven years subsequent to an attack of the fever. Six vaccine injections of 50 to 1,000 million over a period of three

* *Lancet*, January 30, 1909, 311.

months were followed by a cure and disappearance of the typhoid bacilli from the urine.

Smallman* reports two cases of beginning typhoid periostitis in which vaccine injections into the disease foci produced prompt subsidence of the inflammation.

Two cases of localized post-typhoid infection treated with vaccines I have recently seen in consultation. One was a urinary-tract infection, which was treated with an autogenous typhoid vaccine. The other was a case of post-typhoid hepatic or gall-bladder sepsis, treated with a stock typhoid vaccine. In both cases prompt and marked improvement followed the treatment.

It has been suggested that the inoculation method would be of promise in the treatment of typhoid-bacillus carriers. The case of Irwin and Houston just cited was reported as one of a bacillus carrier, which was true enough so far as dissemination of the bacilli in the urine was concerned, but in this case the bacilli were not at any time found in the feces. With the type of bacillus carrier where the organisms multiply indefinitely in the bile or intestinal contents and are thence discharged in the feces, without there being any actual invasion or growth in the body tissues proper, the vaccine injections do not seem to me to offer much prospect of utility, for this reason: The antibodies engendered by the bacillary injections, and circulating in the blood and body fluids, to be effective must be brought into relation with the infective bacilli; when the bacilli are growing in the tissues they are within reach of the blood stream; but when growing in the lumen of the gallbladder or bowel they are beyond the influence of the antibodies in the circulating fluids and multiply without check by the latter.

Dr. Ramsburgh had had a happy experience with the use of bacterial vaccines in a case of typhoid fever complicated with cholecystitis. After a prolonged and exhausting illness, the patient apparently making no progress toward recovery, he called Dr. Nichols in consultation; Dr. Nichols advised the use of a vaccine, and in the seventh week of illness 150 million dead typhoid bacilli were inoculated. The temperature quickly went down to normal but rose again, with an exacerbation of tenderness in the region of the gallbladder; another inoculation caused subsidence of symptoms. This sequence of events required the inoculation of a third dose of vaccine; this time 350 million, and

* Loc. cit.

later 750 million dead bacilli were injected. Five days after the last inoculation the temperature definitely subsided and the patient went on to complete recovery. The case suggested the use of vaccines to cure bacillus carriers and [he briefly discussed the possibility of vaccine therapy for this purpose].

Dr. E. B. Behrend said that the paper had interested him deeply, and the more so since he himself had been doing similar work during the past summer. [After discussing some theoretical considerations respecting the mode of action of the vaccine and the effects of bacterial inoculations upon the blood-defensive mechanism, he briefly presented the results of vaccine therapy in a number of cases which had been under his care.] The conclusions he had reached by observing these cases were rather indefinite; he was not prepared to say that the inoculations had modified the course of the disease to any demonstrable degree; he felt quite sure they had not proved harmful in any sense; the general impression among the internes and nurses was that the patients inoculated were more comfortable, looked better and felt better than those not inoculated. But so far as the study of the clinical record was concerned there was nothing to differentiate the inoculated from the uninoculated patients.

Dr. Wm. J. French related the course of events in the case of a woman, 56 years old, who during the past summer had typhoid fever, with three relapses. In the course of the second relapse, on account of the chronic character the disease had assumed, he had requested Major Russell to inoculate the patient with anti-typhoid vaccine. Accordingly, 250 million dead bacilli were given, followed by a very slight reaction; three days later 500 million were inoculated, and after eight hours the temperature fell rapidly and the patient went into a very toxic condition; she reacted, however, and the temperature rose to a higher degree than it had been before; after another three-day interval another dose of 500 million was given, with no appreciable reaction; a fourth injection was followed by the third definite relapse, and no more vaccine was given. Although there was no real improvement in this case as a result of the inoculations, in the way of hastening convalescence and definite recovery, the subjective symptoms were markedly influenced, the patient always feeling better and having a better appetite after the inoculations. An interesting observation was that on the second day after the inoculations there was always a noticeable looseness of the bowels. The net favorable result in this case was so indefinite as to be estimated with difficulty, but Dr. French's impression was that the course of the disease was influenced for the better.

Dr. Sterling Ruffin said that the subject of Dr. Nichols' paper was a most important one. The cases presented were not convincing of any curative action resulting from bacterial inoculations in the course of typhoid fever. The idea did not commend

itself to his own mind, because acute cases are already and constantly being vaccinated and in danger of being overwhelmed by the intoxication. The introduction of additional large doses of toxic material into the circulation seemed irrational, although no damage had been wrought by the inoculations in the cases reported by Dr. Nichols, so far as can be determined. In chronic cases, on the other hand, the defensive processes of the organism are inactive, and it is in such cases that inoculations are indicated for the purpose of brusquely stimulating the formation of antibodies. In the case reported by himself to this Society, several months ago, the curative effect of the inoculation of a vaccine was most striking.

For prophylactic purposes, however, bacterial inoculations are of great moment; therein, to his mind, lies the chief hope of the typhoid situation. Leishman's recent figures are most convincing, the incidence of typhoid fever among British troops protected by vaccination having been cut down to 10 per cent. The recent recognition of the fact that enteric fever is to a very great extent a contact disease makes it appear a wise precaution, during the prevalence of typhoid fever epidemics, to vaccinate those who come into intimate and frequent contact with patients suffering from the disease, such as nurses, hospital internes, orderlies and the like. During the past summer Dr. Ruffin had employed this precaution at the G. W. Univ. Hospital, vaccinating all the hospital employes who would submit to the process. About half the number of nurses were so vaccinated. No cases developed in the hospital staff. If the protective value of bacterial inoculations against typhoid fever stands the test of time, as we now have reason to believe it will, it would seem that this prophylactic measure should be as widely employed as vaccination against smallpox. He did not by advocating this measure, however, minimize the increasingly important precautions of safeguarding public water supplies, disinfecting excreta, and other sanitary procedures.

Dr. F. F. Russell, U. S. A., had had no experience in the treatment of typhoid by vaccine therapy. He was interested in hearing of so many cases treated by that method in this city; the number spoken of this evening would constitute a large proportion of those reported in the literature. The cases seem to have clearly demonstrated that the administration of the inoculations did no harm and that there need be no alarm in using the method. But the most active results of vaccination, in his opinion, will be found in chronic cases; this is entirely comparable with the action of vaccines in other chronic diseases. It is true that A. E. Wright uses and advocates bacterial inoculations in other acute diseases, as, for example, acute infectious endocarditis, and it would seem best to suspend judgment with respect to the use of vaccines in typhoid fever. It must be remembered that dead

bacteria cause a different response on the part of the organism from that caused by live bacteria ; they are, moreover, introduced into the body at a site remote from the scene of most active infection. In addition to these considerations it must be remembered that the blood reactions indicative of immunity are much stronger after preventive inoculations than after naturally acquired immunity.

As to the prophylactic use of vaccination against typhoid in the British army, the Parliamentary report upon this subject will soon be out and will show that about 50 per cent. of that army has been protected, and the feeling is prevalent among British medical officers that they could not enter a campaign or even undertake extensive maneuvers without this protection. He felt sure that the same opinion will prevail in this country. This measure of protection is applicable also to civilian life, and will be most useful among children. The immunizing effect of inoculations is easily obtained in children, is very marked, and the process gives rise to very little reaction ; for these reasons it would seem wise for parents who are contemplating sending their children into the country for the summer, or away to school, or any other place where the local sanitary conditions are unknown, to have them protected against typhoid by vaccination.

Dr. A. F. A. King said that the suggestion made by Dr. Russell as to the different effects of the living bacteria of disease and of the inoculation of dead bacteria was most interesting to him, and altogether logical. In the one case we have live bacteria feeding upon us and excreting in us, while in the other we merely have disintegrating bacteria dead and buried in us. Differences in the reaction of the body to these two conditions must be expected. Possibly the vigor and multiplication of the living microbes are inhibited by the débris of the dead.

Dr. Macatee said that when Dr. Ruffin reported his case of chronic typhoid fever, cured by the use of bacterial inoculations, he (Dr. Macatee) had suggested the possibility of treating bacillus carriers by this method, but the suggestion had been received with scant enthusiasm. Recently, however, he had observed in the *Journal A. M. A.* a statement by Willard Stone, of Toledo, to the effect that the administration of bacterial inoculations to bacillus carriers offers a more certain means of raising the bacterial resistance than any other known method of treatment. The objection had been made that in bacillus carriers the gallbladder acts merely as a receptacle for a favorable culture medium for bacillus typhosus, and that the bacilli, being merely in the body but not of it, the antityphoid vaccination would have no effect. But as far back as 1898 Courmont, working upon the prognostic value of the intensity of the Widal reaction, noted the presence of antibodies in the peritoneal and pleural fluid, in the cerebrospinal fluid, in the bile and other body juices. It would seem

reasonable to suppose that antityphoid inoculations causing the appearance of antibodies in great abundance in the blood would cause them to appear in the body juices also, including the bile, and thus render the gallbladder an inhospitable place for the propagation of the bacillus typhosus.

Dr. Nichols said that the use of bacterial vaccines in the course of typhoid was undoubtedly paradoxical and, theoretically, one would not expect to get good results. His cases did not indicate that the inoculations did any appreciable amount of good, but they proved practically that bacterial inoculations are not dangerous, in spite of theoretical considerations.

As to the treatment of bacillus carriers by vaccination he found only one such case in the literature. This was a case of post-typhoid cystitis, the bacilli being excreted with the urine; vaccination with dead typhoid bacilli cured the cystitis and, of course, eliminated the bacillus-carrying function of the patient. There was a good deal of editorial comment on this case, and optimistic prognostications as to the value of the method in all chronic bacillus excretors. But the whole agitation was based upon this one case of infection of the urinary bladder, while the ordinary conception of bacillus carriers is of those individuals who merely cultivate bacilli in their gallbladders and excrete them with their bile.

In the literature of the subject of antityphoid vaccination there is one great lack: the very interesting work of Dr. Russell has not yet been published. He has worked out many problems concerned with the production of typhoid antibodies and has noted important points not known to Leishman. When Dr. Russell's investigations shall have been completed and his results published, our knowledge of the subject will be clarified and the literature greatly enriched.

THE NATIONAL ASSOCIATION OF AUDUBON SOCIETIES respectfully invites the members of this Society to join in the movement for protecting the wild birds of the country, which are absolutely essential to successful agriculture and forestry, the foundation of all of the wealth of this land.

A payment of \$5.00 per year will constitute a voting and sustaining member, and there is no obligation other than to exert one's influence for the protection of wild birds and animals.

Members are entitled to all of the publications of the Association, together with its bi-monthly illustrated organ, "Bird-Lore."

CASE OF OSTEOMYELITIS.*

By W. P. CARR, M. D.,

Washington, D. C.

Dr. Carr removed the specimen from a girl who had been treated for several months for what was thought to be erysipelas. She then came under Dr. Llewellyn Eliot's care, with whom Dr. Carr saw her in consultation, and assisted in an operation. At the time Dr. Eliot and he together saw her she was in very bad condition. An incision was made over the tibia; much pus escaped, and with the slightest traction the entire shaft of the tibia was withdrawn; attention being directed to the fibula, this bone was also extracted without difficulty. A focus of redness and swelling above the knee was then incised, pus squirted out through the incision, and the shaft of the femur came away. Nothing remained but to amputate the limb, which was done at Dr. Eliot's request. There was no preparation for this operation, but Dr. Carr completed it in about five minutes. He used a method which, so far as he was aware, was new; he made a perpendicular incision from the great trochanter downward, and slipped a long clamp in so as to secure the great vessels. He then carried the incision around by the circular method, and completed the operation by enucleating the head of the femur; there was no loss of blood.

These cases either do well after operation, or they do very badly; in this case the child was so ill and had been ill so long, that the shock following the operation was very profound, and she died in about twenty-four hours. Such a case as this ought to be a graphic object lesson of the importance of making an early diagnosis; this child's life was sacrificed for lack of early and correct treatment. In treating such cases he preferred the method recommended by Ochsner; free incision through the periosteum in many places, but with no attempt to do a radical operation until the subsidence of acute symptoms; after the incisions the parts should be wrapped in moist carbolic-acid dressings. Thus treated, opportunity is afforded for the formation of an involucrum.

* Reported, with specimen, to the Medical Society, October 27, 1909.

Dr. L. Eliot said that on the 9th of June last he had been called out into Maryland to see this girl, who had been sick for three weeks with what was regarded as erysipelas. He found an erysipelatous condition of the foot and leg, but also an accumulation of pus, which he evacuated by free incision; he established drainage and put the child on quinine and iron. Later he found it necessary to make another incision, and, finding the bones in bad condition, he advised that she be brought to the city for operation; the father, however, refused to have an operation. Later the child's condition became so much worse that the parent's consent was obtained to bring her to the city. Dr. Carr advised against an operation, on the ground that the shock would inevitably be fatal; the father, however, insisted that the operation be done, himself assuming the responsibility. This child's mother had had a similar condition, but refused surgical aid. A brother had been operated upon for hip-joint disease, and now has three inches shortening.

Dr. Hasbrouck said that the case recalled one in his own experience. A boy living on a farm received a trifling wound of the leg from a blackberry thorn; this wound afterwards began to suppurate, and, the parents becoming alarmed, he was brought to the city for treatment. Dr. Hasbrouck found a small inflammatory area which he thought that an incision would probably remedy; but he found that osteomyelitis of the tibia had been going on until it had involved the entire shaft of the bone. Later he removed the whole shaft of the bone, leaving the two epiphyses; but the two joints became involved, and he found it necessary to amputate at mid-thigh. Good recovery followed, but he recollected nothing in his experience so painful to his own sensibilities as the sacrifice of this little boy's leg.

Dr. J. Ford Thompson wished to say a few words upon a disease in the treatment of which he had had a large experience. Years ago, when children with osteomyelitis were brought into the Children's Hospital, the practice was simply to make incisions through the periosteum; the results were most unsatisfactory. He remarked, parenthetically, that many cases were not brought for treatment until they were in a most unpromising condition. It seemed that osteomyelitis was a disease which presented unusual difficulties in diagnosis to the ordinary practitioner, because he knew of no other disease so frequently unrecognized. In later years the treatment was modified and gave very much better results, and he never found it necessary to perform an amputation in cases in which proper treatment could be instituted early. The old simple incision of the periosteum is proper treatment for periostitis, but not for osteomyelitis, in which the diseased process involves the whole bone; after he began to resort to more radical measures the patients' lives were usually saved. Some cases, however, seem to have a fulminating character, and noth-

ing avails to stay the progress of the disease. The treatment in early cases is to incise the periosteum and to drill the bone in as many places as may be necessary to relieve the tension on the inside of the bone; the damage is being done on the inside of the bone, and if wide enough exit is made for the products of inflammation favorable response may be confidently expected. When treatment is instituted late in the course of the disease more radical measures may have to be employed. He has frequently taken out the entire shaft of a bone and has placed a wooden stick wrapped with iodoform gauze within the periosteal sheath; this practice has allowed of the formation of new bone, and after this regeneration had proceeded far enough his practice was to remove the stick of wood by a secondary operation; the results following this method had been most satisfactory in many cases. Thoroughness must be insisted upon in order to insure success in the management of cases of osteomyelitis.

Dr. Jack said that **Dr. Carr's** case was an excellent illustration of double infection of two bones; the bones of the leg and of the thigh had been infected without involvement of the joint. The infection must have been transmitted by way of the soft tissues, perhaps through lymph channels. It seemed to **Dr. Jack** that there is no excuse nowadays for failure to recognize osteomyelitis and to secure competent treatment. Radical treatment is always demanded in this very dangerous disease.

Dr. Carr was glad to hear the remarks of the gentlemen who had taken part in the discussion. He had felt very strongly upon the subject, and had presented the specimens in order to insist upon the importance of early diagnosis.

In spite of **Dr. Thompson's** remarks **Dr. Carr** endorsed **Ochsner's** method, which consists of incision or incisions through the periosteum and the application of voluminous moist carbolyzed dressings about the affected limb; this course to be persisted in until the subsidence of the acute process. Of course more radical measures may be undertaken in cases with limited involvement; the tentative plan is applicable in cases of extensive disease. The boring of holes into the medullary cavity is good advice and he was disposed to accept this amendment; but the early removal of the entire shafts of bones was to be deprecated, because it is impossible to tell how much bone may recover. The fear of gangrene following wet carbolyzed dressings is not well founded; trouble is encountered only when too strong solutions are used, or when dressings are allowed to dry, in which cases the carbolic acid becomes concentrated by the evaporation of the water. The use of $\frac{1}{2}$ -per cent. solutions, if the solution is well made and the dressings kept constantly wet, may be persisted in for a long time without injury. Such weak solutions serve to allay pain and by absorption exert an antiseptic action. Although the carbolic acid usually appears in the urine it does not seem to cause any deterioration of the kidneys.

Dr. J. Ford Thompson inquired if Dr. Carr could explain how carbolic dressings on the skin could affect bacteria within the bone. In a disease in which the whole process is not only within the periosteum, but within the bone itself, the proposition that the application of gauze soaked with a weak antiseptic solution could influence the course of events seemed to Dr. Thompson the most absurd, the most unlikely, the most impossible idea conceivable.

Dr. Carr replied that the solution of carbolic acid does good by its absorption into the blood vessels and lymphatics; the bacteria in the tissues around the bone, and propagating and spreading through the vessels, are the organisms that do the most harm; the bacteria within the bone are not so harmful. After all, bacteria, or better, infective processes under pressure, are the dangerous processes; the relief of tension at once causes improvement and converts a dangerous condition into a simple one.

CASE OF PLASTIC OPERATION TO FREE ADHERENT ARM.*

By E. M. HASBROUCK, M. D.,

Washington, D. C.

Dr. Hasbrouck presented a patient to demonstrate the result of a plastic operation to free an arm which had become adherent to the chest wall. The patient was a colored woman who in childhood had a frightful burn involving the arm and chest; as a result of neglect or inefficient treatment, the arm had become adherent to the chest wall from axilla to elbow. The adhesion extended over the entire inner aspect of the arm at the axilla, but became somewhat attenuated toward the elbow, where it became a sort of thick web, as a result of long-continued efforts to use the arm, which efforts had rewarded the patient with some restricted motion at the elbow and a flipper-like use of the hand and forearm. Dr. Hasbrouck performed a plastic operation, somewhat like that done in the treatment of web-finger; it had been necessary, also, to transplant a portion of skin from the chest to cover the denuded area on the arm, and to perform several tenotomies to allow of extension of the arm. [He demonstrated the steps of the operation upon the patient.]

* Reported, and patient shown, to Medical Society, October 27, 1909.

Dr. J. Ford Thompson complimented Dr. Hasbrouck upon the success of the operation. Dr. Thompson had had a number of such cases and had always found them difficult to treat. While the result in Dr. Hasbrouck's case had been brilliant, the thinness of the web had contributed very materially to the successful outcome. With a web only about half an inch thick it is very easy to cover the denuded area, and once that is accomplished, the result is assured. But when the web is very thick it is often necessary to make very extensive denudations, with exposure of important vessels. Dr. Thompson recounted his own experience with several such cases, in which embarrassing conditions had to be overcome. In cases of this kind the underlying structures have to be taken into consideration in deciding the feasibility of separating the adherent parts. The recurrence of contractures is another difficulty and one that is frequent, especially in the hand. If it is practicable to cover denuded surfaces with flaps, as Dr. Hasbrouck had done, most of the unpleasant results will be avoided.

Dr. Shands congratulated Dr. Hasbrouck upon the result of the operation. Dr. Shands had had a somewhat similar case in a boy, resulting from a burn received while he was very young. An interesting feature of this case was that as a result of long-continued efforts to free the arm from the chest attachment, the humerus had become decidedly bowed.

Dr. Jack said that with respect to post-operative contractures, every case is a law to itself; what will happen in one case will not happen in another similar case. The webbed cases of this kind are much easier to handle than those in which the arm is fast to the chest wall.

Dr. W. P. Carr said that these cases differ very much from each other, but if the limb can once be made straight there ought not to be much difficulty in keeping it straight and free; the liberal use of skin grafts should do much to prevent contractures. But if the limb or part cannot be made straight in the first instance, then there will be much more trouble to retain the improvement.

Dr. Hasbrouck thanked the speakers for their remarks. He said that Dr. Thompson had misunderstood the statement about the web between the arm and chest in the case reported. The web was about one-half inch thick at the free edge, at the elbow, but the adhesion progressively became thicker and tighter toward the shoulder, until at the axilla it extended from the anterior to the posterior fold; it was the extensive denudation required to separate the parts here that made necessary the use of a flap from the chest.

CASE OF EPIDEMIC CARCINOMA OF THYROID IN FISHES.*

By H. M. SMITH, M. D.,

Deputy Commissioner of Fisheries.

Washington, D. C.

Dr. Smith presented several specimens showing a prominent tumor of the thyroid gland in lake trout. The disease has recently become epidemic among domesticated trout, and has been a subject of active and earnest study by the Bureau of Fisheries. Histologically the tumor is a carcinoma of the alveolar type, not distinguishable in section from like tissue of human origin. The cause of the disease and the mode of propagation have not yet been determined. The disease does not seem to interfere with the growth and activity of the fish, nor does it shorten life to any appreciable extent.

Dr. E. L. Morgan said that this disease may become interesting from an economic standpoint. If fish may give rise in us to carcinomatous disease, cattle to tuberculosis, and bad grain to pellagra, the price of food may go still higher when health officers begin to condemn and destroy these food sources.

Dr. A. A. Snyder had seen the disease in question among fishes in a large hatchery in the State of Pennsylvania. The economic aspect of the situation did not present itself as being very grave, because he had seen a large number of these fish taken out of the pool, killed and sent off to the markets of New York.

Dr. H. M. Smith said that the parasitic theory of the causation of carcinoma was interesting, but only a theory. One of the lines of study now being pursued is upon crustacean parasites: could they possibly be intermediate hosts of the infecting or causative organisms? It would seem to him that the chances of communicating the disease from fishes to man would be very remote, as fish are always eaten well cooked.

An interesting fact in connection with this epidemic disease is that American fish in Germany and New Zealand are found to be affected with it, and these fish have been sent to these countries in the form of eggs. The transplantation experiments at the Buffalo Cancer Research Laboratory have not gone forward far enough to prove anything as yet.

* Reported, with specimens, to the Medical Society, October 20, 1909.

CASE OF DERMOID CYST OF TESTICLE.*

By W. P. CARR, M. D.,

Washington, D. C.

Dr. Carr presented the specimen because true dermoid cysts are very rare in the testicle, though common enough in the ovary; he had not had time to look up the literature of the subject, but he had been informed by Dr. Borden that there are only two or three cases recorded. The tumor was removed from a boy, two years old; the cyst was probably congenital, but it grew rather rapidly after birth. Before operating he made the diagnosis of cyst and decided that it ought to be removed, but he was much perturbed by his inability to find the other testicle, and concluded that it must be undescended; this, of course, made an unfavorable element in the prognosis, because an undescended testicle is not apt to be physiologically useful. After the scrotum was opened, however, and the tension removed, the unaffected testicle came down very nicely; moreover, the testicle giving rise to the cyst was uninjured, the cyst being just within the tunica albuginea, at one end of the testicle and not extending into its parenchyma. It was removed by splitting the tunica albuginea, shell-ing out the mass and then closing the tunica over the testicle. The boy recovered and is now well; his health has improved since the operation. The cyst contained bones, hair, and a few rudimentary teeth.

CONGENITAL TELANGIECTASIS OF ARM AND FOREARM.†

By L. A. LAGARDE, Lieut. Col., Med. Corps, U. S. A.,

Washington, D. C.

This case has already been shown and a history presented to the Denver Medical Society, Colorado, and published in *Colorado Medicine* for June, 1909, page 245. Briefly stated, the disease began in a female infant, which at birth showed a growth the size of a pea on the palmar side of the left wrist; it was slightly elevated and considered a birthmark. But it increased in size,

* Reported, with specimen, to the Medical Society, October 27, 1909.

† Reported, with specimen, to the Medical Society, November 3, 1909.

and other similar tumors appeared on the back of the fingers. When one year old one of these was removed, and from time to time others, so that there are several scars on the hand and forearm. When five years old the middle finger was enlarged four times the normal size and was removed. When seven years old she was taken to Johns Hopkins Hospital, but apparently without result. When eleven years old the arm began to pain at night. When twelve years old, 1909, the arm was pale in some places and showed venous enlargement in others; pulse regular, but feeble. Dr. LaGarde, assisted by Dr. Raymond, U. S. Army, amputated three inches below the shoulder joint. Although the arm was exsanguinated for five minutes, dark venous hemorrhage was profuse on cutting the main vessels, suggesting the presence of dilated vessels. The wound entirely healed by the eighteenth day.

Several microscopical examinations were made, the last by Dr. J. S. Neate, of the Army Medical Museum, who reports as follows:

Sections from different parts of the forearm showed the same histological picture: a congeries of dilated blood spaces located within the muscle bundles, the supporting connecting tissue, or the surrounding areolar tissue matrix. This condition was associated with a proliferative endarteritis affecting in some degree nearly all the bloodvessels. So general were these areas that it was practically impossible to obtain a field under a low-power lens which did not contain one or more of them. These collections of blood were of two types—the cavernous angiomas proper, by far the most numerous, and areas of circumscribed or interstitial hemorrhage, relatively few in number. The latter could be distinguished by the absence of well-developed walls with dividing partitions, the presence of more or less organization in the clot, and crystals of blood pigment and pigment-bearing cells.

The dilated blood spaces or varicose capillaries constituting the new growth were surrounded by well-defined, relatively-thick fibrous walls lined with flattened endothelium; these again were subdivided into irregular spaces by thin septa, which in many instances appeared to be incomplete. These spaces were arranged in groups of pin-head size, filled with red blood cells in a fair state of preservation, and had their normal quota of leucocytes.

The bloodvessels, which were quite numerous, showed a proliferative change confined, in some instances, to the endothelium, which had proliferated and projected into the lumen, while in others this excessive proliferation had extended to the middle and

outer coats, which showed degenerative fibrosis; and this arteritis in some of the vessels resembled the obstructive type. Around these vessels there could be seen collections of young connective-tissue cells and large numbers of basophilic coarsely-granular cells of the mast-cell type; in fact, this type of cell was found generally distributed throughout the tissue. Circumscribed and diffused collections of round cells of lymphoid type were also found in connection with the angiomatous spaces, and this condition was in harmony with the excessive connective-tissue reaction which was so marked a feature in all the sections.

The muscle fibers for the most part exhibited both longitudinal and cross striations; only a few gave evidence of degeneration. On the other hand, there was evidence of under development. On cross section, individual fibers and fasciculi were found to be widely separated by strands of connective tissue and their outlines variable and undersized. This atrophic condition of the musculature could be accounted for by want of use, the constant encroachment of minute fibroses and deficiency in nourishment. In this condition of capillary dilatation and engorgement, accompanied by disturbance of the endothelium, small aseptic thromboses would be expected to occur, and these undergoing cicatrization and the inevitable shrinkage, would, in turn, lead to more obstruction and excess of connective-tissue growth. Similarly, the free hemorrhages would in time be replaced by a form of scar tissue. These fibrous patches developing in the corium and involving the sensory nerve filament, explain, in part, the pain complained of.

That want of nourishment could occur in a member abnormally full of blood can be appreciated, when it is recalled that the blood was to a great extent locked up in spaces with relatively-thick fibrous walls and not available as tissue food.

The larger arteries appeared to bear a direct relation to the angiomatous areas for, corresponding to each group of blood spaces and just outside the connective-tissue envelop, there was found an artery proportionate in size and exhibiting marked degenerative changes.

The term capillary dilatation has been used in this description, but must be understood as a designation of size and location rather than anatomical structure, since the blood spaces were structurally very similar to erectile tissues and the cavernous angiomias of the liver and other organs, but much smaller in size; and when their total blood capacity is considered, an important contributory factor to the accompanying endarteritis must be acknowledged.

The microscopical findings, taken in conjunction with the history of the case, justify the diagnosis of congenital cavernous telangiectasis.

Dr. McLaughlin felt indebted to Dr. LaGarde for the history of this most interesting case and for the presentation of the specimen. With respect to the origin of this extensive disease, had there been any injury of the arm from which the process could have arisen? Also, were there any patches of vascular degenerations elsewhere, or was there any sign of general distribution of the disease? This point was of interest and importance, because with such extensive degeneration in the arm it would be supposed that the cause would be operative elsewhere with the production of telangiectatic patches throughout the body.

Dr. W. P. Carr said that the question had been asked if it would not have been better practice to have taken the arm off at the shoulder joint on account of the liability of the fragment of the humerus to grow and thus produce a conical stump. He thought that Dr. LaGarde was to be congratulated on having saved a portion of the humerus, because even two or three inches of stump may be of the greatest service to the patient. For the sake of conferring this benefit, it seemed to Dr. Carr worth while to leave as much bone as possible and perform whatever secondary operation might become necessary. He spoke of a case in point: a farmer whose arm had been amputated so as to leave only a few inches of the humerus, and who made much use of the stump, and used it entirely to secure the reins while riding, guiding the horse by the swaying of his body.

Dr. LaGarde, replying to Dr. McLaughlin, said that there had been no history of injury in this case. Careful search of the body revealed no evidence of telangiectasis beyond the arm originally affected. As to the election of the site of amputation, there had been no question at the time of the operation but that the arm was removed well beyond the confines of the disease. He was glad to hear Dr. Carr commend the amputation through the humerus; that course had commended itself to his own judgment, but he felt that he might have been wrong in not going through the joint. That point cannot yet be definitely determined.

A NEW MEDICAL SOCIETY has been formed, called the Women's Medical Society of the District of Columbia, with the following named officers: President, Dr. Mary Parsons; Vice President, Dr. Sofie Nordhoff Jung; Recording Secretary and Treasurer, Dr. Emma L. Erving; Corresponding Secretary, Dr. Mary O'Malley. Already two meetings have been held, at the second of which there were nineteen members present and at which Dr. Erving read an instructive and amusing paper on Orthopedics.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE
DISTRICT OF COLUMBIA.

Wednesday, October 6, 1909.—The President, Dr. E. A. Balloch, presided; about 75 members present.

The following candidates were elected active members :

Tom A. Williams, University of Edinburgh, 1896.

Francis A. Chisholm, University of Maryland, 1889.

Joseph J. Mundell, Georgetown University, 1903.

Henry V. Johnston, George Washington University, 1907.

Cornelius DeWeese, Jefferson Medical College, 1895.

Dr. D. S. Lamb, for the Committee on History, reported that the history had been printed and bound, and that 300 copies had been received and were ready for distribution, which would be made by the delivery company—that being the most economical way.

Dr. McLaughlin, from the Committee to negotiate with the Cosmos Club upon the subject of an Assembly Hall, reported progress, and the committee was continued.

Dr. J. T. Kelly read the paper for the evening : "Caesarean Section. Should the Obstetrician be a Specialist?" Discussed by Drs. A. F. A. King, Fry, Jack and Stavely. See p. 263.

Wednesday, October 13.—The President, Dr. Balloch, presided; about 65 members present.

The following were elected members by invitation : Lieut. Col. Louis A. LaGarde and Capt. Chas. F. Craig, Medical Corps, U. S. A.

The Chair announced the death of Drs. George C. Burton and Charles A. Ball, and appointed the following committees to report suitable resolutions of respect: For Dr. Burton—Drs. Brumbaugh, Perry and D. S. Lamb. For Dr. Ball—Drs. Franzoni, Vaughan and Pool.

The Chairman of the Historical Committee was authorized to present copies of the "History" as follows: To the Library of Congress, 2 copies; the Carnegie Library, 1 copy; the Surgeon General's Library, 1 copy; Miss Cordelia Jackson, 1 copy.

The Corresponding Secretary was authorized to send program cards to the officers attending the Army and Naval Medical Schools.

Dr. D. S. Lamb presented specimens as follows: 1. Pneumonia, with Calcareous Deposits at the Root of Lung. 2. Syphilis of the Liver, together with Syphilitic Lesions in Spleen and Heart and Subphrenic Abscess. See p. 290.

Case of Pneumonia.—The lung weighed 41 ounces, just about twice the normal weight; showed both red and gray hepatization; some exudate on the pleura. The lung was much pigmented, as also were the bronchial nodes; the latter also showed

points of calcification, probably of tuberculous origin. The patient was a colored man, a laborer, age 43; was admitted to hospital and died the next day; his pulse was 110 to 120; respirations, 50. The necroscopy showed a well-nourished body; firm, old adhesions of lungs; right lung pneumonic; left lung edematous. Heart large, weight $16\frac{1}{2}$ ounces; some old pericarditis; atheroma of ascending aorta; white clots in the cavities extending into the connecting veins. Liver fatty; spleen weighed only 5 ounces and was much pigmented. Kidneys small and granular; weighed respectively 2 and 3 ounces. The brief time that the man was under observation and his low condition precluded securing information that, in view of the small size of the kidneys, would probably have proved to be a very interesting case.

Dr. Roy read a paper entitled: "The Therapeutic Value of Ions." Discussed by Dr. Barton. See p. 276.

Dr. Werber read a paper entitled: "Junod's Hyperaemic Derivations," and presented specimens of the apparatus and a patient in whom strangulated hernia had been reduced by Junod's method. Discussed by Drs. Nichols, W. P. Carr, E. P. Magruder, Hooe and E. L. Morgan. See p. 281.

Wednesday, October 20.—The President, Dr. Balloch, presided; about 60 members present.

Dr. McLaughlin, for a committee appointed as provided for by resolution of Dec. 3, 1908 (the other members being Drs. S. S. Adams and Prentiss Willson), reported that the committee had arranged for a smoker complimentary to the members of the Historical Committee, to be held at Rauscher's Nov. 17th.

Dr. D. S. Lamb, Chairman of the Historical Committee, reported the receipt of acknowledgments from the libraries to which copies of the History had been given. He also presented a bill for printing, binding and distributing the History, the amount being \$1,653.28. The original bid for this work was \$1,323.75, and he explained the reasons for the increase.

Dr. Hooe moved that the report be accepted and the bill paid. Seconded. Dr. Lamb offered as an amendment that \$1,000.00 be paid upon the bill, and the balance liquidated as the Treasurer becomes enabled by the receipt of funds. The amendment was accepted and the motion, as amended, carried.

The Chairman of the Historical Committee was authorized to place insurance to the amount of \$1,000.00 on the copies of the History in storage.

Dr. Hasbrouck presented the following specimens: 1. Lipoma of the Scrotum; 2. Lumbricoid Worm in the Appendix; 3. Primary Carcinoma of the Omentum.

Dr. Kelley presented a specimen of Calculous Pyelonephritis. Discussed by Drs. H. A. Fowler, Chappell, I. S. Stone and Kelley.

Dr. Erving presented a specimen of Chondroma of Femur. Discussed by Drs. Van Rensselaer, Groover and Erving.

Chondroma of Femur.—A colored man, laborer, 43 years old, presented himself for treatment at Freedmen's Hospital for a growth in the upper thigh. One year before admission he had begun to have pain and disability in the limb. His family and previous histories were negative. There was no history of traumatism. Examination disclosed a hard mass just below and in front of the great trochanter; a diagnosis of sarcoma was made. Dr. Jack made an amputation at the hip, followed by good recovery of the patient. Examination of the specimen at the Army Medical Museum resulted in the histological diagnosis of chondroma, originating in the medulla of the bone.

Dr. Van Rensselaer asked what Dr. Erving thought of the chances for recurrence in this case. As the tumor was very high in the thigh it seemed likely that the chances of recurrence were very great.

Dr. Groover asked if all the other bones were examined for other possible foci of disease.

Dr. Erving replied that the operation went through tissues well clear of the tumor, which in addition was well encapsulated. There was no evidence of escape from the original site of development. Careful examination failed to find any tumor formation in any other bones.

Dr. Owen presented a specimen of Anomalous Subclavian Artery. Discussed by Dr. D. S. Lamb. See p. 291.

Dr. H. M. Smith presented specimens of Epidemic Carcinoma of the Thyroid in Fishes. Discussed by Drs. E. L. Morgan, Snyder, I. S. Stone and H. M. Smith. See p. 313.

Dr. D. S. Lamb presented for Dr. T. V. Hammond specimens of *melanotic cancer of the heart and kidneys*.

Man, age 35, fairly well developed, was admitted to Providence Hospital, Sept. 26, 1908, with a history of having had a contusion of the middle of the outer side of right thigh two months previously; it pained him at times, but healed up. The glands in the right groin became enlarged and were excised; they were black and sarcomatous. He left the hospital November 12th. Was readmitted March 8, 1909; very weak; had lost about 20 pounds in weight. There were many black nodules scattered over the body, hard to the touch, and varying in size from a pea to a walnut. He rapidly became weaker, and died April 29th. The post-mortem examination showed a widespread dissemination of small, black nodules; metastases in all the organs and tissues.

Dr. Lamb said that it was worth while noting the very rapid termination of this case, the rapid progress of the disease and the early fatality being characteristic of melanotic cancers. The history did not state whether there was any tumor at the site of the

injury on the thigh; the first tumors to be noted were in the groin.

Dr. Hammond replied that there was no tumor at the site of injury on the thigh, only a dark blotch.

Wednesday, October 27.—The President, Dr. Balloch, presided; about 55 members present.

An appropriation of \$11.50 was made, to pay the premium on \$1,000.00 fire insurance on 600 copies of the History of the Society held in storage.

Dr. Paul B. Johnson resigned his membership.

Dr. A. F. A. King suggested that a formal report should be made by the Historical Committee, signed by all the members thereof, setting forth what had been done, the amount of moneys expended and other pertinent facts. The Chair ruled that such a report would be proper, and the chairman of the committee stated that such a report would be made before the committee was discharged.

Dr. E. L. Morgan submitted a letter from the Librarian of the Public Library of the District of Columbia, asking for an expression of the desire of the Society with regard to the disposal of certain medical publications, originally deposited by the Society in that Library. The letter was referred to the Executive Committee for consideration and report with recommendations.

Dr. Hasbrouck presented a patient showing the results of a plastic operation to relieve the disability from extensive adhesions between the arm and chest wall, the adhesions being the result of a burn. Discussed by Drs. J. Ford Thompson, Shands, W. P. Carr and Hasbrouck. See p. 311.

Dr. W. P. Carr presented specimens as follows: 1. Osteomyelitis. Discussed by Drs. L. Eliot, J. Ford Thompson, Jack and Carr. See p. 308. 2. Dermoid Cyst of the Testicle. See p. 314.

Dr. Randolph read the paper for the evening, entitled: "Four Years in Tuberculosis Dispensary Work." Discussed by Drs. Kober, E. L. Morgan, Williams, H. P. Parker, Woodward, Chappell and Randolph.

Wednesday, Nov. 3.—The President, Dr. Balloch, presided; about 75 members present.

The Treasurer presented his report for October, showing: Receipts, \$848.00; disbursements, \$1,019.50.

Dr. F. H. Harrison, U. S. N., was elected a member by invitation.

In response to a request from the Health Officer, a committee was appointed to coöperate in the revision of the Health Department's pamphlet on Hygiene of Infancy: Drs. S. S. Adams, Acker and McLaughlin.

Dr. Louis A. LaGarde, U. S. A., presented a specimen of Te-

langiectasis of the Arm, with a history of the case. Discussed by Drs. McLaughlin, Carr and LaGarde. See p. 314.

Dr. H. D. Fry presented a specimen of Ectopic Pregnancy, and related the history of the case. Discussed by Drs. Chappell and D. S. Lamb.

Dr. Prentiss Willson reported a case of Snake Poisoning.

Dr. J. B. Nichols read the paper for the evening. Subject: "Bacterial Inoculations in the Prophylaxis and Treatment of Typhoid Fever." Discussed by Drs. Ramsburgh, E. B. Behrend, Wm. J. French, Sterling Ruffin, A. F. A. King, Macatee and Nichols. See p. 293.

WASHINGTON MEDICAL ANNALS.

Journal of the Medical Society of the District of Columbia.

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Editorial.

THE HISTORY OF THE MEDICAL SOCIETY.—The History has been finished, and over three hundred copies have been distributed. Many members have not yet subscribed. Since the period covered by it is nearly one hundred years it might reasonably be supposed that there is enough interesting information therein to make it a desirable acquisition to every member of the Society. It is hoped, therefore, that there will be no delay on the part of members in securing it. The price is the actual cost, \$3.00, for which it will be mailed anywhere within the Postal Union. Checks, etc., should be sent to the Treasurer, Dr. C. W. FRANZONI, 605 I Street, N. W. The book can also be obtained at the printer's, R. Beresford, 618 F Street, N. W., at the same price.

The opportunity is also presented to send copies of the book as gifts to medical and other friends, as well as to institutions, such as libraries and the medical and other colleges from which mem-

bers have graduated. It is hoped that members will be interested to do this, so that the book may be well distributed. As a book of reference it would be a desirable acquisition to libraries.

EXAMINATION FOR LICENSE TO PRACTICE MEDICINE IN WASHINGTON.—The success or failure of both the medical student and the medical graduate, so far as written examinations are concerned, depends upon much the same conditions. These conditions are mainly referable to the training of the individual candidate and only in a minor degree to the college of graduation. While the percentage of failures of candidates for license is greater for graduates of some medical colleges than others, there is probably no medical college in this country or abroad that does not count more or less failures among its graduates, as to registration for the practice of medicine.

In Washington the percentage of failures is very nearly the same for each of the colleges here, as shown by the report in the *Journal of the Amer. Med. Assn.*, and these remarks are therefore fairly applicable to the graduates of each, as well as to those from colleges outside this District.

There is no doubt that the personal factor enters largely into the success of an examination. The candidate who knows the less may make a better showing than one who knows more. It is the same story, in part, of success in any pursuit in life. The candidate who can collate only a few facts, but elaborates and illustrates these few, arranges them logically, states them in good form and covers the scope of the question, gives the impression, at least, that he has a sufficient and satisfactory knowledge of the subject, and that he has the qualities of a physician on whom reliance can be placed.

On the other hand, the candidate who may really be more conversant with the subject, but lacks the ability to state the facts in a lucid and logical way, gives to the examiner the opposite impression, namely, that he, the candidate, has not the matter well disposed in his mind, and lacks certain necessary qualities of a good physician. The marking of this candidate, will therefore almost certainly be lower than that of the other.

Some complaints have been made by candidates in this District that the two-hour limit of time allotted for examination in each

individual subject is sometimes too short to do justice to the subject. Admitting that this complaint is sometimes justifiable, in the main the time is sufficient. Appropriate answers can be made to many questions in a few minutes, provided, of course, that the candidate knows the subject.

It might be well to require the candidate, as is done in some civil service examinations, to write a brief autobiography as the first step in the examination. Such a paper would probably show what defects there are in his "English" education, whether this education attains a minimum standard. But as some such standard has been adopted by all the better colleges, as a preliminary to admission to the college work, the time ought soon to come when the advisability of such an autobiographic account would no longer exist. As an instance of a college waking up to the need for a more thorough preliminary training, it is stated that Yale University has recently decided to reject papers of candidates for admission that do not attain the minimum standard in "English."

FROM A LETTER, September 12th, from Dr. Eleanor J. Pond, formerly of this city, now Secretary-Treasurer of the Board of Medical Examiners for the Philippine Islands, office at Manila, the following extracts are taken: "The new General Hospital is growing rapidly; it is to be on the pavilion plan and quite large and roomy. One of the matters our Board has had to undertake was the withdrawal of the license of Dr. Dominados Gomez for infraction of the opium act. His name may not be so well known to you as to us, but he is a prominent personage in the Spanish Filipino world. An exceedingly clever man, a politician, an orator * * *. It seems a terrible thing to do, however, to pass judgment on so polished a gentleman * * *. We are trying to fight uncinariasis and beriberi as preliminary to work against tuberculosis. Dr. Heiser never lets up in his leprosy campaign * * *. This morning we had quite a "temblor" or earthquaking. It is many years since Manila was visited with a truly big quake, and I hope as many more will elapse, as these shakes, which last for fifty seconds or so, are quite suggestive enough of earth's inner forces. I just missed the Messina horror last December."

MEMBERS ARE REMINDED that all matter for the ANNALS, including alterations and corrections in manuscript or proof sheets, must first be brought to the attention of the chairman of the Editorial Committee, to whom the printer is responsible.

THE HIPPOCRATES SOCIETY, the object of which is "the cultivation and promotion of knowledge in whatever relates to the science of medicine and surgery," holds meetings on the second and fourth Thursdays of each month from October to May. The membership in this Society is limited to 25. The officers for the present season are: President, Dr. Edgar Snowden; Vice President, Dr. Arthur L. Hunt; Secretary and Treasurer, Dr. Laurence M. Hynson.

Schedule of Meetings for the Balance of the Session of 1909-'10.

Date.	Place.	Essayist.
Nov. 11.	Dr. S. H. Greene, Jr., 132c Q St.....	Dr. T. S. D. Grasty.
Dec. 9.	Dr. T. S. D. Grasty, 1273 N. H. Ave.....	Dr. J. D. Rogers.
Jan. 13.	Dr. W. W. Wilkinson, The Burlington...	Dr. Chas. M. Beall.
Jan. 27.	Smoker.....	Invited Speaker.
Feb. 10.	Dr. W. H. Syme, The Laclede.....	Dr. C. L. Davis.
Feb. 24.	Dr. G. S. Saffold, 1760 T St.....	Dr. Wilbur Brandenburg.
Mar. 10.	Dr. Carl Henning, The Rochambeau.....	Dr. D. G. Smith.
Mar. 24.	Dr. D. G. Smith, 3121 Fourteenth St.....	Dr. C. S. White.
Apr. 14.	Dr. C. L. Davis, 1342 Q St.....	Dr. Edgar Snowden.
Apr. 28.	Dr. E. L. Mason, 1909 Fourteenth St.....	Dr. L. M. Hynson.
May 12.	Dr. C. S. White, The Farragut.....	Dr. J. Lewis Riggles.
May 26.	Smoker.....	President's Address.

THE THERAPEUTIC SOCIETY meets on the first Saturday in each month at the G. W. College of Pharmacy, 808 I Street, N. W. Secretary, Dr. S. R. KARPELES, 1102 Fifth Street, N. W. Physicians invited.

WASHINGTON MEDICAL AND SURGICAL SOCIETY.—President, H. Atwood Fowler; Vice President, Chas. M. Emmons; Secretary, Geo. H. Heitmuller; Treasurer, Frank E. Gibson; Curator and Librarian, W. G. Erving.

Program—1909-1910.

Essayist.	Date and host.	To open discussion.
Dr. Gibson.....	Dec. 27, 1909, Dr. Hasbrouck.....	Dr. Jack.
Dr. Graham.....	Jan. 24, 1910, Dr. Jack.....	Dr. Gannon.
Dr. Hasbrouck.....	Feb. 28, 1910, Dr. Kaufman.....	Dr. Frankland.
Dr. Jack.....	Mar. 28, 1910, Dr. Miller.....	Dr. Fowler.
Dr. Kaufman.....	Apr. 25, 1910, Dr. Mitchell.....	Dr. Erving.
To be selected.....	May 16, 1910, Annual Banquet.....	— —
Dr. Fowler,		
President's Address,	Oct. 24, 1910, Dr. Nevitt.....	— —
Dr. Miller.....	Nov. 28, 1910, Dr. Egbert.....	Dr. Emmons.
Dr. Mitchell.....	Dec. 26, 1910, Dr. Gannon.....	Dr. Clark.

EARLY AND LEPROSY.—A letter from Bergen, dated August 18, 1909, from the Congress on Leprosy that met there, states that Hansen demonstrated leprosy bacilli in a section of skin that had been taken from Early and sent by his wife to Hansen for diagnosis.

FOR SALE.—A 16-plate Birtman Static, in first-class condition, with full set of electrodes; and Victor Motor, using either direct or alternating current, for running the machine. Also,

A Lencodescent Lamp, 500 candle power, used but little; maker: Spear-Marshall Co.

Address or see Dr. JESSE H. RAMSBURGH, The Portner.

A BOOSTING CLUB.—Why not a "Booster Club" or "Praise Your Brother Club" in the American Medical Association, with no dues or other requirements except that each member pledge himself never to speak unkindly or in criticism of a brother physician to the laity except that physician be also present? Let us renew our vows, and wear buttons to show that we mean to keep them.

If such a condition could be brought about we would be held in much greater esteem by our patients and neighbors. Whenever a physician is condemned, maligned or criticized by another physician, the ill-will engendered in the minds of the laity is not against the one physician, but the class; individuals are forgotten and the profession is remembered as a whole. If I tell everyone

I meet that Dr. Pill is a rank physician, knows nothing of medicine and will stoop to any mean practice, the laity soon forget that Dr. Pill is a "poor doctor" and retain the impression that we are all "poor doctors," ready to stoop to anything.—*Jour. Amer. Med. Assn.*, Aug. 7, 1909.

THE PRESIDENT OF THE AMERICAN GYNECOLOGICAL SOCIETY has appointed a Committee, to report at the next annual meeting, in Washington, on the Present Status of Obstetrical Teaching in Europe and America, and to recommend improvements in the scope and character of the teaching of Obstetrics in America.

The Committee consists of the Professors of Obstetrics in Columbia University, University of Pennsylvania, Harvard, Jefferson Medical College, Johns Hopkins University, Cornell University and the University of Chicago.

Communications from anyone interested in the subject will be gladly received by the Chairman of the Committee, Dr. B. C. Hirst, 1821 Spruce St., Philadelphia, Pa.

A WORKING KNOWLEDGE OF SIMPLE REFRACTION.—From a letter signed by Drs. Leartus Conner, A. R. Bell and J. Thornton, a committee of the A. M. A., the following is extracted:

"It is necessary that the State Boards of Registration require it for license and medical colleges teach it in course.

"Recognizing its importance the Michigan State Board of Registration, on Feb. 12, 1909, notified medical colleges that thereafter it would grant licenses to practice only to such applicants as demonstrated, on a living subject, with simple spherical lenses and test types, their working knowledge of simple refraction.

"Recalling the fact that our system of medical education makes no adequate provision for training the family physician in simple refraction and that it is impossible for experts to meet the needs of all the people in this respect, it is plain that this class of cases has had no other source of relief than the optician. But if the State Boards require a working knowledge of simple refraction for license the needs of all the people will be fully met by qualified physicians, and the optician resume his normal vocation as a spectacle merchant."

THE AMERICAN PHYSIOLOGICAL SOCIETY will meet in this city December 28 to 30, 1909.

WE ARE REQUESTED to publish the following: The *American Journal of Surgery* will produce in December a Philadelphia issue of the journal, the subject matter of which will be composed entirely of contributions from among the leading men of that city. Among the subjects to appear and their contributors are the following:

"A Consideration of the Diagnosis and Treatment of Retro-Displacement of the Uterus." By E. E. Montgomery, M. D., Prof. of Gynecology, Jefferson Medical College.

"Polypoid Growth of the Rectum and Report of a Recent Case." By Lewis Adler, Jr., M. D., Prof. of Diseases of the Rectum, Philadelphia Polyclinic.

"Tumors of the Urethra in Women." By Barton Cooke Hirst, M. D., Prof. of Obstetrics, University of Pennsylvania.

"The Control of Hemorrhage During Pregnancy." By Edward P. Davis, M. D., Prof. of Obstetrics, Jefferson Medical College.

"Cyclodialysis." By Walter L. Pyle, A. M., M. D., Ophthalmologist to the Mt. Sinai Hospital, Asst. Surgeon of Wills Eye Hospital, etc.

"Roentgen Treatment of Malignant Diseases." By Charles Lester Leonard, A. M., M. D., ex-President of the American Roentgen Ray Society.

"The Conservation of the Middle Turbinate Body." By William A. Hitschler, M. D.

"The Diagnosis and Treatment of Ectopic Pregnancy." By F. Brooke Bland, M. D.

The following well-known surgeons will also contribute, and their titles will be announced at a later date:

Ernest La Place, A. B., A. M., M. D., Prof. of Surgery, Medico-Chirurgical College.

Prof. William Campbell Posey, Prof. of Ophthalmology, Philadelphia Polyclinic.

John G. Clark, M. D., Prof. of Gynecology, University of Pennsylvania.

H. M. Christian, M. D., Clinical Professor of Genito-Urinary Diseases, Medico-Chirurgical College.

John A. McGlinn, A. M., M. D.

THE ANNALS will publish any local medical news concerning the medical societies, hospitals, colleges and other institutions in this District, and the personnel of the same, whenever such news would be of general interest; provided, of course, that the information is given by persons who are known to the Editorial Committee.

EXCHANGES.

American Journal Surgery.

Buffalo Medical Journal.

California State Journal Medicine.

Colorado Medicine.

Cronica Medica Mexicana.

Journal Kansas Medical Society.

Journal Medical Society New Jersey.

Journal Missouri State Medical Association.

Journal South Carolina Medical Association.

Louisville Monthly Journal Medicine and Surgery.

Maryland Medical Journal.

Monthly Cyclopedia and Medical Bulletin.

New York State Journal Medicine.

Northwest Medicine.

Northwestern University Bulletin.

Old Dominion Journal of Medicine and Surgery.

Pacific Medical Journal.

Pathologica, Genoa.

Pennsylvania Medical Journal.

Practical Therapeutics.

Proctologist.

Providence Medical Journal.

Texas State Journal Medicine.

Virginia Medical Semi-Monthly.

West Virginia Medical Journal.

PUBLICATIONS RECEIVED.

Annals of the Clin. Laboratories; "The Therapeutic Applications of Colloidal Metals;" March to June, 1909.

C. W. Stiles, "Hookworm Disease in its Relation to the Negro;" U. S. P. H. and M. H. S., 1909. Also, "Treatment of Hookworm Disease;" U. S. P. H. and M. H. S., 1909.

B. D. Evans, "Court Testimony of Alienists;" reprint.

T. B. Keyes, "The Renewal of Life;" Chicago, 1909.

J. D. S. Davis; report of a case of "Urethral Transplantation;" reprint. Also, "Blood Transfer;" reprint.

Wm. Dutcher, "The Horrors of the Plume Trade."

A. F. A. King, "What is a Living Animal? How Much of It is Alive?" reprint.

J. M. Ball, "Dr. Adam Hammer, Surgeon and Apostle of Higher Medical Education;" reprint.

C. P. Wertenbaker, "A Working Plan for Colored Antituberculosis Leagues;" U. S. P. H. and M. H. S., 1909.

W. C. Rucker, "Plague among Ground Squirrels in Contra Costa Co., Cal.;" U. S. P. H. and M. H. S., 1909.

Worth Hale, "The Influence of Certain Drugs upon the Toxicity of Acetanilid and Antipyrin;" Bull. 53, Hygienic Laboratory, U. S. P. H. and M. H. S., 1909.

Elias Elvove, "The Fixing Power of Alkaloids in Volatile Acids and its Application to the Estimation of Alkaloids with the Aid of Phenolphthalin, or by the Vollard Method;" Bull. 54, Hygienic Laboratory, July, 1909.

H. W. Loeb, "A Study of the Anatomic Relations of the Optic Nerve to the Accessory Cavities of the Nose;" reprint.

W. H. Schulz, "Quantitative Pharmacological Studies; Adrenalin and Adrenalin-like Bodies;" Bull. 55, Hygienic Laboratory, April, 1909.

W. M. Polk, "Suprapubic Operation upon the Pelvic Floor for Prolapse of the Uterus;" reprint.

Kebler, Morgan and Rupp, "Harmfulness of Headache Mixtures;" Farmer's Bulletin 377, Dept. Agriculture, Sept. 28, 1909. (This is practically Bulletin 126, which was reviewed in the September ANNALS, rewritten for the layman.)

T. E. Satterthwaite, "Newer Conditions of Cardiac Arrhythmias and their Treatment;" reprint.

U. S. Naval Medical Bulletin, October, 1909.

L. A. Conner, "The Rational System of Medical Education will furnish Physicians Adequate for the Entire Field of Medical Practice;" also, "Simple Refraction for Family Physicians;" two reprints.

W. R. Brinckerhoff and J. T. Wayson, "Studies upon Leprosy." Also, W. R. Brinckerhoff, "Leprosy in the United States of America in 1909;" P. H. and M. H. S., 1909.

W. A. Wells, "The Voice as Affected by General Conditions;" also, "On the Various Affections of the Voice and their Local Causation;" reprints.

D. H. Currie, "The Second International Conference on Leprosy; held in Bergen, Norway, August 16 to 19, 1909;" P. H. and M. H. S., 1909.

Medical Miscellany.

Leprosy.—Currie, in Reprint No. 41, from Public Health Reports, U. S. P. H. and M. H. S., No. 38, September 17, 1909, gives an account of the Second International Conference on Leprosy, held at Bergen, Norway, August 16 to 19, 1909. In the various countries represented, the following may be mentioned as having over 1,000 lepers in one country: India, 97,340; Japan, 40,000; Java, 15,000; Argentine Republic, 12,000; Indo-China, 10,500; U. S. Colombia, 4,152; Philippines, 2,330; Russia, 1,372; Cuba, 1,297. Many other countries were represented, but the number of lepers in each was under 1,000; in the mainland of the United States, 146; Hawaiian Islands, 764; Porto Rico, 17; Guam, 19; Canal Zone, 7. The Danish-French Commission for the study of the disease reported that as a result of its work it was found that if a leprous nodule is punctured the blood that flows is often rich in bacilli due to a mixture of lymph from the lymph spaces. The blood drawn by an insect in biting rarely contains any bacilli and never many, since the bacillus is rarely found in the blood, except in those dying from the disease.

De Beurmann, of Paris, believes that the skin is the usual site of infection, the nares less so. He thinks that the leprolin of Ross is of some value. Babes recommends tuberculin.

Von Peterson recommended the colony plan and that the children of lepers should be early separated from the parents. Sand, after an experience with 1,500 lepers, was convinced that infection does not always result from direct contagion.

During reported against leprosy being hereditary; but the children of lepers are often physically weak and more susceptible to many diseases, especially tuberculosis.

Sticker believes that the disease is limited to the human subject. VonDeycke uses nastin in treatment, combined with benzo-chloride, and finds marked improvement. Kiwull used nastin in fourteen cases, found that three improved, six did not, and five became worse. Brinckerhoff used nastin in six cases; two showed slight improvement, four became steadily worse.

Leprosy.—At the conference just named, Dehio, of Dorpat, Russia, maintained very emphatically the contagiousness of leprosy, while Sand, of Trondhjem, Norway, after thirty-five years' experience in a leprosarium and after having treated 1,558 lepers, concluded that the disease was not transmitted by immediate contact. Von Dühning, of Dresden, finds that the disease affects the descendants of lepers, causing deterioration of the race; but transmission of the disease to children is improbable.

Mercury in the Treatment of Tuberculosis.—Moseley, in *California State Jour. Med.*, Sept., 1909, page 338, has a paper on this subject. He concludes that nearly all cases improve for the first month or six weeks; the appetite is better, night sweats less marked and often cease altogether, hemoglobin increases from 10 to 20 points and the patient feels stronger; but after a month or six weeks the patient is likely to remain stationary or perhaps lose a little in weight, and the hemoglobin decreases 5 to 10 points. This may be partly due to giving too large doses. He thinks that if we give one-fifth grain for two weeks and then decrease the dose one-half, the result might be better. He has never noticed any bad effects from the treatment. Some patients have occasionally had pain following the first few injections; one was salivated, but rapidly recovered on withdrawing the drug and did not seem any worse for the experience. He believes that the mercury acts as a tonic and is useful especially in cases that are markedly anemic or complicated with syphilis.

Tuberculosis of Pericardium Cured by Incision and Drainage.—Gibson, *Medical Record*, New York, Aug. 7, 1909, p. 216, reports a case in a negro man, age 26.

Malaria and Mosquitoes.—S. R. A., in *Jour. Trop. Med. and Hygiene*, July 15, 1909, p. 220, states that he has found that the mosquitoes breed in the water in the forks of trees; he used kerosene with success against them.

Beri-Beri.—Braddon, in *Jour. Trop. Med. and Hygiene*, July 15, 1909, p. 212, states that some 2,000 cases of this disease are admitted annually to hospitals of the Straits Settlements; the mortality has been much reduced since the use of the *cured* rice.

Lupus Erythematosus.—W. S. Gottheil, in *New York Med. Jour.*, July 3, 1909, p. 12, recommends solid carbon dioxide in the treatment. He says that some cases of lupus respond to the various nondestructive local applications; but in most cases the ultimate result is destruction of the affected skin and formation of scar tissue. It is entirely proper, therefore, first to try the milder applications. If these fail, we must use measures that hasten skin destruction and obtain as cosmetic a scar as possible. For this purpose there is no means so manageable, efficacious, painless, rapid and desirable as the solid carbon dioxide.

Rickets and the Suprarenals.—Jovane and Pace, in *La Pediatria*, May, 1909 (*Brit. Med. Jour.*, July 31, 1909, p. 274), from experiments on dogs and rabbits, found that the muscular tone of the rickety child was increased and strengthened, the appetite and nutrition improved by the use of suprarenal extract. The good effects were attributed to those obscure processes of biochemistry by which internal secretions affect the organism.

Hookworm Disease in Panama.—Whipple, in *Amer. Jour. Med. Sci.*, July, 1909, p. 40, finds hookworms in 31 per cent. of his autopsies; the old-world hookworm, *ankylostomum duodenale*, in 17 per cent., and the *necator americanus* in 21 per cent. He also found the whipworm, *trichuris trichiura*, in 17 per cent. and the lumbricoid in 8 per cent. Hookworms removed from the intestinal mucosa a few hours after the death of a patient often contain fresh blood. They ingest both blood and epithelial cells and presumably digest both. The anemia is due not only to direct loss of blood but to diffuse inflammation of the jejunum caused by the bites of the worm and entrance of intestinal bacteria.

Hookworm Disease; Treatment.—Dr. C. W. Stiles considers this subject. Persons interested can procure a copy of the pamphlet by addressing the "Surgeon General of the Public Health and Marine Hospital Service, Washington, D. C."

Constitutional Conditions Affecting Nasal Catarrh.—C. W. Richardson, *Monthly Cyclop. and Med. Bull.*, October, 1909, p. 577, calls attention to the fact that nasal disturbances occur most often in the form of vascular changes in the turbinal tissue; there is a paroxysmal form that occurs oftenest at night; a rather constant type that also is worse at night; and a third form that occurs at night, and is attended with a similar condition in the bronchial tract, as shown by coughing and wheezing. The cause is an overtaxation of the nervous system without proper exercise and rest. The treatment is to lessen work and increase exercise, especially in the open air, with the mildest of local treatment.

Peliosis Rheumatica.—Shaw reports a case in *Jour. Kansas Med. Society*, October, 1909, p. 363. A man, age 70, had a sore throat and was getting worse; had pain in right hip; temperature 99, respirations 22, pulse 82. Examination of throat showed nothing abnormal. Two days after he was first seen he had hemorrhage from dorsum of finger and also edema of both hands and arms; joints of elbows, hands and wrists became painful. Next day other hemorrhages, purpuric, over all the joints of the right hand, mostly on palmar surface; a few over the wrist joint and one over each elbow. Two days later, the thirteenth day of the disease, the hemorrhages became bullous and the first hemorrhage became neurotic. Twenty-first day, edema disappearing from hands and arms, but noticed in legs and feet. Twenty-second day, hemorrhages over small joints of feet; also one three inches in diameter over coccyx; another over calf of leg, two to five inches in size; another into tongue, uvula and soft palate; swallowing very painful; pains in joints acute. Twenty-fourth day, hemorrhages on outer side of foot became bullous; temperature, which had ranged between 99 and 104, became normal and remained at that; throat symptoms disappeared; patient eating heartily. A slough appeared on foot thirty-sixth day and edema began to disappear; pains and swelling of joints disappearing. A portion of tongue and uvula sloughed away. Examination of the blood in the bullae showed large numbers of eosinophiles; there was albumin in the urine. Sodium salicylate was given at first, but was discontinued because of the throat symptoms; the only other remedy was sherry wine. The slough on the foot gradually healed.

What is a Living Animal? How much of it is Alive?—A. F. A. King, in *Popular Science Monthly*, September, 1909, p. 295, submits the following definition: A living body, whether a simple cell or a fully-developed mammal, consists of a temporary aggregation of a limited number of material particles, call them what we may—molecules, atoms, ions, electrons—whose actions and reactions between each other and between themselves, and their environing conditions (light, temperature, air, water, food, terrestrial magnetism, gravitation, etc.) are of such a kind as to generate electro-magnetic energy, which energy *is* and necessarily *must be* secured to the use of the individual producing it, by a semiporous limiting external envelope which provides the individual with electric insulation from its surroundings.

Insanity, Responsibility and Punishment for Crime.—Walsh, in *Amer. Jour. Med. Sci.*, August, 1909, p. 262, considers this subject and concludes that the term insanity is so vague that its use as a plea to enable criminals to escape punishment is not justifiable. Responsibility differs in different persons, but is

never quite eliminated except in absolute idiots. For persons of low mentality, and even in animals, punishment has a good effect. Indeed, punishment is more needed for those of low mentality than for the normal. Subrational persons with the cunning of the insane will take advantage of our leniency.

Milksickness.—Jordan and Harris, in *Jour. Infectious Diseases*, Sept. 20, 1909, p. 481, conclude a long article on this subject with the statement that there is no doubt that there is such a disease common to both man and the higher animals, and it has a definite symptom-complex. Certain tracts of land are concerned in the causation, and clearing, draining and cultivation have removed the dangerous qualities of the land. The disease is communicated to man through the medium of raw milk or butter, possibly meat if not thoroughly cooked, possibly also water. The writers have isolated a microörganism, called the *bacillus lacti-morbi*, that they think may possibly be the cause.

Septicemia following Submucous Resection of Nasal Septum.—Hays, in *Amer. Jour. Surgery*, Nov., 1909, p. 360, reports two cases, one of which died.

Blood Pressure.—Barach, at the last meeting of the Medical Society of the State of Pennsylvania (*Jour. Amer. Med. Assn.*, October 30, 1909, p. 1507), reported a study of the pressure in seventy males. He found that at 40 years of age the pressure was 115, at 60 was 135, at 80 was 150; 20 above or below these figures represented the limit of the normal; figures beyond this range meant something pathological. The main treatment of such cases consisted in regulation of the mode of life.

Coagulation Time of Blood.—Solis-Cohen, *Penna. Med. Jour.*, September, 1909, p. 962, summarizes the results of his work as follows: The coagulability is not affected by outdoor temperature, humidity, menstruation, fever, diarrhea, anemia or alcohol. The time of clotting is shortened in pulmonary tuberculosis in all stages, after a hemorrhage, and when the barometer is high. The time is increased in jaundice. The time seems to be less before than after a meal. Coagulability is less in typhoid fever during the acute stage but is increased in convalescence. Applications to the shed blood of heat, pressure on the punctured part, exposing the blood to the air when the humidity is low, shorten the time. Persons interested should read the entire article.

Influences of certain Drugs upon the Toxicity of Acetanilid and Antipyrin.—Hygienic Laboratory, U. S. P. H. and M. H. S., Bulletin 53, 1909. The conclusions that Worth Hale reaches

are that the deleterious effect of acetanilid on the heart is but slightly antagonized by caffein; sometimes the two drugs seem to combine to depress the heart to a greater degree than the acetanilid alone. The heart rate is, however, not slowed by the combination, as occurs from acetanilid alone. Caffein increases the toxicity of acetanilid mixtures when given to the *intact* animal. Sodium carbonate seems to lessen the poisonous effect of acetanilid on the heart; there is less depression; this is also true of the intact animal. Morphine alkaloids increase the toxicity of acetanilid. Salicylates and bromides seem not to alter the poisonous effects in any way.

Antipyrin.—Caffein prevents the slowing of the pulse rate from antipyrin but does not materially antagonize the heart depression. The two drugs in combination are more poisonous to the intact animal than antipyrin alone. Sodium bicarbonate somewhat antagonizes the antipyrin, except in the intact animal, where it does not appear to lessen the toxicity of the antipyrin.

Antidotal Effects of Alcohol on Phenol.—Novack, in *Monthly Cyclop. and Med. Bull.*, August, 1909, p. 495, considers this subject, and concludes that phenol or carbolic acid, though a powerful corrosive, limits its destructive action by forming an albuminous coagulum; alcohol acts by its solvent and repellent properties and not by any chemical action; when used early it is of great value externally, but later the destruction of tissue is not prevented, though the appearance is better; because of the properties of alcohol it is dangerous to allow it to remain in the stomach along with the phenol. The treatment advised is, first, lavage with a solution such as the magnesium-sulphate-albumin mixture, followed by lavage with a solution of alcohol as a clearing agent.

Ivy Poisoning.—Baird, in *Medical Record*, New York, Aug. 7, 1909, p. 232, states that in this disease he does not use ointments, and no bandages, because these tend to spread the poison over the surface; however, he sometimes uses a loosely applied dressing of absorbent cotton, kept moist and changed at short intervals. Frequent and copious washings with lukewarm water and an un-irritating soap, which dissolves and removes the poisonous serum. In handling the inflamed surface it is best to wear rubber gloves. After washing the parts he applies a warm solution of 2 to 4 per cent. potassium permanganate, which neutralizes the poison, the strength of the solution and frequency of application depend on the judgment of the physician. After the acute stage has passed and a condition of eczema exists, soothing ointments may be used; water may be objectionable. The permanganate stains the skin.

Drug and Alcohol Habitues Treated with Hyoscine.—Riewel, in *Monthly Cyclop. and Med. Bull.*, Oct., 1909, p. 587, states that the hyoscine treatment eliminates the desire for these drugs; the only contraindication to its use is the presence of Bright's disease. The cases should be put to bed and watched by competent nurses day and night during the first week.

Otitis Media Suppurativa; Treatment with Carron Oil.—Riggs, in *U. S. Naval Medical Bulletin*, Oct., 1909, p. 379, reports two cases so treated with prompt recovery.

A Living Double Monster.—In the *Bull. Manila Medical Society* for June, 1909, is a report, with an illustration, of a double monster, two Filipino infants united by the sacrum; technically, a pygopagus. The children are fifteen months old. Besides the sacral union the only thing in common is a common terminal portion of rectum. The children are well nourished, of the same size, and look alike; temperamentally different, one is irritable and cries on being disturbed, the other takes things easily. The birth was easy and rapid; one presented by the head, the other by the feet.

Congenital Absence of Kidney.—Hagner, in *Jour. Amer. Med. Assn.*, Oct. 30, 1909, p. 1481, reports a case in a woman, age 40, weight 225 pounds, who had pyelitis, for which he incised and drained the kidney. She died nine days after operation; the necroscopy showed a large pyonephrotic kidney on one side but no sign of either kidney or adrenal on the other, and only one ureteral opening in the bladder. The doctor, through cystoscopic and ureteral examinations, had been led to believe that there was only one kidney.

[In the discussion on this case before the Medical Society of the District of Columbia, Dec. 2, 1908, Dr. G. BROWN MILLER stated that he had seen the patient with Dr. Hagner and had inspected the bladder through the cystoscope, but did not get a good view, and thought that the other ureter might be present. The condition is very rare; Morris says that solitary kidney occurs only once in 3,500 cases; he classes such cases as Dr. Hagner's, not as solitary kidney, but as unilateral, unsymmetrical, congenital absence of kidney, and says it occurs only once in about 7,000 cases. As to the unfortunate result in this case, Dr. Miller suggested that it might possibly have been better to wash out the kidney through a large ureteral catheter.]

DR. HAGNER replied that the question of washing the kidney through a catheter had been considered, but that the patient's nervous condition was such that she had to be etherized in order to use the cystoscope, and it was regarded the lesser evil to open and drain the kidney.]

Ethyl Chloride as a General Anesthetic.—Johnson, in the *U. S. Naval Medical Bulletin*, October, 1909, p. 346, states that ethyl chloride is peculiarly adapted for use in the naval medical service because of the simplicity and ease of administration and safety; the rapidity with which anesthesia is induced and recovery takes place; absence of unpleasant after effects; the lessening of shock; absence of irritation of larynx; cheapness and portability; and, given before ether or chloroform, it lessens time, danger and the unpleasant sensations of the patient.

Rubber Gloves.—R. S. Fowler, in *New York State Jour. Med.*, Sept., 1909, p. 361, concludes from his own experience that the gloves do not reduce the number of post-operative infections; the wound must be made larger than otherwise in order to permit visual direction; the tactile sense is decidedly interfered with; the continued use of the gloves does not educate the tactile sense anywhere near to that of the bare hand; there was no difference in his own case as regards the condition of the skin of his hands; manipulation was slower and in some cases decidedly dangerous; the length of time of operation was decidedly increased, and hence there was added the danger and shock to the patient.

Post-operative Acute Dilatation of Stomach.—H. B. Smith, in *Bost. Med. and Surg. Jour.*, Oct. 14, 1909, p. 529, discusses this subject, and concludes that the condition is of comparatively frequent occurrence after surgical operations done under general anesthesia. The prognosis is good if the condition is recognized early and treated at once; otherwise bad. He recommends evacuation of stomach and bowel contents.

Sarcoma of the Upper Jaw.—Laroque, *Old Dominion Jour. of Med. and Surg.*, reports an interesting case removed under rectal anesthesia. One-fourth grain of morphine was given an hour before operation. Chloroform, by inhalation, was given to the stage of full narcosis, when it was suspended and the anesthesia continued by ether *per rectum*. Laroque states that the rectal anesthesia was perfectly satisfactory, there being complete absence of coughing and no interference with the operator. A transient irritation of the rectum was the only untoward result of the anesthesia.—E. A. B.

Cancer of Stomach; Use of the X-Ray.—Pfahler, in *New York Med. Jour.*, Aug. 21, 1909, p. 356, believes that a diagnosis can be made by the x-ray sooner than has heretofore been thought possible.

The Proctologist for Sept., 1909, contains the proceedings of the American Proctologic Society for 1909. One is struck by the frequency with which surgical procedures are advocated for con-

ditions formerly considered as purely medical. For instance, there are four papers on the treatment of pruritus ani, one of them being by Martin, of this city. He and Krouse recommend radiating incisions for the relief of this condition, while Beach asserts that in nearly every case a small submucous fistula may be found, the slitting up of which will cure the trouble. At the same meeting Gant advocated the treatment of chronic diarrhea by irrigation from above through an opening in the cecum, and described in detail a new cecostomy operation which enables him to insert tubes into both the small and large intestines. The article is fully illustrated.—E. A. B.

Fatty Infiltration of Liver in Infant Three Months Old.—

Pratt, in *Bost. Med. and Surg. Jour.*, Sept. 16, 1909, p. 395, reports a case. Discussion on p. 407.

Mortality Statistics for 1908 ; Bureau of the Census, 1909.—

The following extracts are made from the report. The report is for the *Registration Area* which includes the States of California, Colorado, Connecticut, Indiana, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, South Dakota, Vermont, Washington, Wisconsin, the District of Columbia and 74 cities in non-registered States. The total population of this registered area is nearly 52 per cent. of the estimated population of continental United States. Total deaths for the year in this area, 691,574. The year 1908 had a remarkably low mortality. Nearly one-fourth of all deaths registered were of persons *not* born in the United States.

The death rate in 1,000 of population ranged from 10.1 in South Dakota to 18.4 in California. Comparison with deaths abroad shows that in England and Wales the rate was 14.7; in the city of London, 13.8. The rate for large cities in the United States was from 8.3 for St. Joseph, Mo., to 23.6 for San Francisco.

As to the causes of death, there were 92 from smallpox; 5 from plague; 2 from yellow fever; 11 from leprosy; 82 from rabies; 23 from pellagra (there probably were more, the disease not being recognized); 11,375 from typhoid fever; 4,611 from measles; 4,969 from whooping cough; 10,052 from diphtheria and croup; 78,289 from tuberculosis, all forms; 33,465 from cancer; 60,038 from disease of heart; 61,259 from pneumonia, all forms; 52,213 from diarrhea and enteritis; 39,203 from Bright's disease, the chronic form; 8,332 suicides; 44,089 accidents.

There is much other interesting material in the report.

Tuberculosis.—The following extracts are taken from the published Transactions of the International Congress on Tuberculosis, of September-October, 1908. The volumes cover some 5,000

pages and contain very much of interest and value. Only such things as lent themselves to brief extracting have been taken.

In regard to the viability of the tubercle bacillus Rosenau concludes from a series of experiments that the bacillus can live a long time in dust exposed to the weather, somewhat over seven months; and about 140 days when exposed to the sun. Sputum dried in rooms preserves its virulence till the seventh or ninth month.

"Action of Diffuse Light on the Bacillus Tuberculosis."—Weinzirl, of Seattle, concludes from his experiments that diffuse light acts as a germinicide directly, and independently of desiccation. The bacillus can be killed by diffuse light in from one day to a week.

"Inoculation of Tuberculosis Through the Skin."—Courmont and Lesieur, of Lyons, France. The skin, although apparently intact, is not an impassable barrier to the passage of the tubercle bacillus, probably due to the hair. There may not be any trace of such passage.

"Dissemination of the Bacillus by Flies."—André, of Lyons, France. Flies fed on tuberculous sputum evacuate in their excretions considerable quantities of bacilli; this excretion may continue as long as five days, and food a long way off may be contaminated by the fly.

"Immunization."—Calmette and Guérin, of Lille, France. A local suppurative tuberculosis in a consumptive improves the patient's condition and increases his resistance. Some clinicians claim to have obtained improvement in tuberculous patients by subcutaneous inoculation of cultures of virulent bovine bacilli, or dead bacilli, or cultures of human bacilli modified by passage through the body of a cold-blooded animal. Tuberculin is, however, an efficient and less dangerous remedy that secures immunity.

"Action of Soaps on the Vitality and Immunizing Property of the Bacillus."—Noguchi finds that the salts of oleic acid have a marked bactericidal property on various types of tubercle bacilli.

"Anatomical Characteristics of Tuberculous Infections."—Arloing, of Lyons, France, states that the lesions that accompany tuberculous infection do not always present tubercles visible to the naked eye; they are sometimes visible only on histological section. Sometimes we find only bacilli in the tissues, and no tubercular lesion.

"Tuberculosis in Different Organs."—Adami and McCrae, of Montreal, analyzed 1,000 consecutive autopsies and found evidence of tuberculosis in 417, or 41.7 per cent. They consider this proportion as being a little less than the average for Canadian cities, and admit that in some cases the lesions may have escaped notice or, though suspected, could not be proved. The lesions showed healing in 151 cases; were latent in 93; an active early condi-

tion in 22; generalized in 43; pulmonary in 85; 13 in bones; 10 in the genito-urinary tract.

"Pleural Adhesions and Tuberculosis."—Landry, of Montreal, analyzed 1,374 consecutive autopsies in a general hospital. 990 cases showed pleural adhesions; 558 cases showed microscopical evidence of tuberculosis in the thorax and 68 of tuberculosis elsewhere. Besides these there was fibrosis of the apex of the lung in 89 cases. Adding up all these it would appear that 715 cases, or 52 per cent., of the autopsies showed signs of tuberculosis. 523 cases showed pleural adhesions, and in 50 per cent. of these there was coincident tuberculosis.

"The Frequency of Healed Tuberculosis in the Mesenteric Glands."—Warthin, of Ann Arbor, concludes that minute hyaline formations, representing healed chronic miliary lesions, are present in the cervical, bronchial and mesenteric glands of all adults. Such lesions are in the great majority, if not in all cases, miliary tubercles.

"Conjunctival Tests."—Baldwin, of Saranac Lake, N. Y., states that as a result of 1,087 tests he finds that the conjunctival tuberculin test with weak solutions and a single instillation has some value in confirming the presence of tuberculosis in the early stages. It has little value when the symptoms of tuberculosis are only suspicious. The conjunctival reaction is unreliable for prognosis. With proper precautions danger to the eye is slight. It should be restricted to adults.

"Mixed Infections in Tuberculosis."—Ravenel and Klebs believe that such infections modify the course of the disease injuriously, are causative factors in some of the grave accidents, and generally tend to shorten life, in many cases appear to be the direct and immediate cause of death.

"Comparative Importance of Treatment in Sanatoriums Near at Hand and an Entire Change of Climate."—Knight, of Boston, believes that the sanatorium treatment of a large proportion of cases of tuberculosis is the best, at least in the beginning. Edson, of Denver, says that an outdoor life is an essential aid to the cure of the disease, and that that climate is most favorable which most readily permits this outdoor life; but if the patient is so circumstanced that he cannot secure in a new climate the food, accommodations, care, medical attention, etc., that he requires, he had better stay at home.

"Fluoroscopy as a Routine Method of Clinical Investigation of Pulmonary Tuberculosis."—Rist, of Paris, states that the x-ray gives us valuable information; adds some precision; corroborates, sometimes corrects, the diagnosis. He thinks that no case is completely examined unless the x-ray is used. Krause, of Jena, says that the x-ray often reveals the infiltrative process, cavities, calcified foci; confirms or completes the clinical findings.

"Hemoptysis as a Symptom of Early Pulmonary Disease."—

Anders, of Philadelphia, states that in about 10 per cent. of chronic ulcerative pulmonary tuberculosis hemoptysis first directs attention to the disease; in not less than 25 per cent. of such cases it is among the symptoms that usher in the active period of the disease.

"Diet in Tuberculosis."—Fisher, of New Haven, holds that forced feeding should be abandoned; the proportion of nitrogenous food should be much reduced.

"Treatment with Tuberculin."—Raw, of Liverpool, advises physicians to treat tuberculous cases at their homes with tuberculin. With proper precautions there is no danger; he has never seen the slightest ill effects follow if ordinary care is used in giving carefully-graduated doses.

"The Treatment with Maragliano Serum."—Flick, of the Phipps Institute, Philadelphia, says that the consensus of opinion of the twenty physicians who used this treatment at that Institute seemed to be that the serum has no special value.

"Graduated Labor in Pulmonary Tuberculosis."—Paterson, of the famous Brompton Sanatorium, believes that graduated labor is a definite medical treatment in this disease and raises the general health and resisting power of the patient. Inman, of the same hospital, states that the opsonic index has shown that the graduated exercise has supplied the stimulus needed to induce artificial autoinoculation; with the aid of this index the stimulus can be scientifically regulated; this, of course, involves laboratory work.

"Rest of the Lung in Pulmonary Tuberculosis."—Birge, of Los Angeles, Cal., maintains that the lung should be kept at rest for the same reason that a tuberculous joint is kept at rest.

"Ultimate Results of Sanatorium Treatment."—Brown, of Saranac Lake, says that a sanatorium should keep in touch with its former patients; 41 per cent. of the patients discharged from his sanatorium are able to work for from one to twenty-three years after their discharge; 87½ per cent. of all patients alive are able to work.

"Comparative Value of the Dispensary and Sanatorium Treatment."—Egger, of Basle, says that it is difficult to compare them. Serious cases are better treated in sanatoriums; lighter cases can be treated in dispensaries or polyclinics with just as good results.

"Home Treatment of Tuberculous Patients."—Coleman, of Georgia, states that in the vast majority of cases the fight against tuberculosis must be waged in the home; in a large number of cases the results are just as good, and in some even better, at home.

"Tuberculosis of Larynx Treated with Formaldehyd."—Bullock, of Silver City, New Mexico, has treated 100 cases, and concludes that the drug is to be recommended. Casselberry, of Chi-

cago, finds that the disease frequently resolves in whole or part ; ulcers heal.

"The City of Mexico and its Neighborhood as a Sanitary Station for Consumptives."—Liceaga, of Mexico City, thinks so well of this territory that he recommends that the valley of Mexico be selected for the establishment of an international sanatorium.

"Altitude and Tuberculosis."—Liceaga also states that a considerable elevation, say six to twelve thousand feet above sea level, is favorable.

"Ophthalamo-Tuberculin Test."—Oliver, of Philadelphia, finds it valuable, when properly used, in determining tuberculosis of the eye and the adnexa, particularly in primary infection of the same, and should be made in all cases that are doubtful. The therapy in such cases should be tuberculin.

"Retroperitoneal Tuberculous Glands ; Their Relation to Spinal Symptoms."—Painter, of Boston, says that the glands may erode the vertebrae, and spinal symptoms follow.

"Treatment of Tuberculous Hipjoint by Weight Bearing and Fixation by the Lorenz Short Hip Spica."—Wilson, of Philadelphia, recommends this method.

"Vaccine Therapy in Joint Tuberculosis."—Ochsner recommends it.

"Immobilization in Tuberculous Arthritis."—Codivilla, of Bologna, recommends it.

"Mosetig Paste ; to Obliterate Tuberculous Bony and Articular Cavities."—Nove-Jusserand, of Lyons, France, used Mosetig's iodoformized mixture, but thinks it unnecessary to scrape the cavities.

"Value of Roentgen Ray in Early Recognition of Tuberculosis of Bones and Joints."—Beck, of New York, recommends it.

"Tuberculosis of Bladder."—Karo, of Berlin, says that this disease is almost always a descending process of hematogenous origin, result of renal or genital tuberculosis. In most cases the bladder recovers spontaneously after removal of the diseased kidney. Direct surgical treatment of the bladder is of no avail.

Lewis, of St. Louis, finds that practically all cases of this disease, at least in women, are secondary to tuberculosis of the kidney.

"Tuberculosis of Vas, Epididymis and Testis."—Walker, of New York, says that castration should be limited to those cases in which only one testicle is extensively diseased ; is objectionable when both testes are involved. Epididymectomy is to be preferred ; cure usually follows ; can be done under cocain anesthesia.

"Tuberculosis of Kidney."—Bevan, of Chicago, says that the disease is comparatively common ; is at first unilateral ; an early diagnosis is possible ; by proper treatment can be cured in early stages.

Von Illyes, of Budapest, finds that the disease is as frequent in men as women and on one side as the other; is usually due to hematogenous infection, and when cavities are formed in the lungs. Spontaneous recovery is never permanent. In the initial stage a positive diagnosis can be made only by simultaneous catheterization of both ureters. Nephrectomy should be done before the bladder becomes affected. Circumscribed tuberculosis of bladder may heal spontaneously after removal of the diseased kidney.

"Surgical Treatment of Tuberculous Sinuses and their Prevention."—Beck, of Chicago, recommends injecting the sinuses with bismuth paste so that they can be seen with the x-ray, and can be cured by injecting them with a 33-per cent. bismuth-vaseline paste. An excess of 100 grams may cause some toxic effect.

"Rational Spinal Support."—Frauenthal says that the brace should rest on the iliac crest by means of a collar or some similar support; otherwise it is useless, because it will slide up and down. When the disease occurs above the seventh thoracic vertebra the patient should be treated in the recumbent position for months or years, or a brace or jacket should be applied with a jury-mast attached, that will take off the superimposed weight above the level of the disease.

"Tuberculosis in Children."—Shennan, of Edinburgh, reviewed 1,085 cases; 413 died of tuberculosis; ages 3 months to 13 years; 68 per cent. under 5 years old; lymphatic glands involved in 340 cases, mediastinal oftener than abdominal; dissemination took place apparently from the mediastinal, and these were often accompanied by recent tuberculosis of lungs, in many cases evidently secondary to the glandular disease. Primary ulceration of intestines was often found without previous cavities in lungs. Death from tuberculous meningitis occurred in 44.5 per cent. of all the cases; dissemination apparently from mediastinal groups; in 24 cases of meningitis tuberculous nodules were found in the brain, but at least some of them did not appear to have caused the meningitis.

"Relation of Measles, Whooping Cough and Influenza to Tuberculosis in Children."—Copeland, of Washington, thinks that the relation is of small importance; that if the tuberculosis develops it is due to preexistent latent disease.

"Cutaneous Tuberculin Test in First Year of Infancy."—Medin, of Stockholm, says that the test is valuable in diagnosis.

"Localization of Tuberculosis in Children."—Hutchinson, of New York, finds that pulmonary tuberculosis occurs oftener in children than was formerly supposed. The lung is the part oftenest involved, and suffers most severely; tuberculosis of bones, joints and glands is secondary.

"Distribution of Tuberculous Lesions in Children."—Woll-

stein, of New York, says that primary intestinal tuberculosis is comparatively rare in infants, and children under 3 years old; respiratory tuberculosis predominates.

"Tuberculous Pulmonary Cavities in Infants."—White and Carpenter, of Philadelphia, state that the formation of cavities occurs less often than in older children; the infants usually die of the wide-spread process.

"Abdominal Tuberculosis in Children."—Bovaird, of New York finds that this occurs oftener in Great Britain than in the United States. Bovine infection often occurs in abdominal tuberculosis.

"Occurrence of Pulmonary Tuberculosis in Children of Tuberculous Parents."—Miller and Woodruff, of Bellevue Hospital, state that this is more frequent than is supposed, but the type seen in adults is rare in children under 10 years old. The cutaneous tuberculin reaction is more reliable than the ophthalmic and quite equal to the hypodermic. Malnutrition is sometimes the only appreciable evidence of tuberculosis in children. Examination of sputum is almost valueless in diagnosis of early tuberculosis in children.

"Human Contagion as a Factor in Infantile Tuberculosis."—Comby, of Paris, says that among 1,432 autopsies of children in Paris hospitals in 14 years he found 529 tuberculous subjects; 252 under 2 years old, 25 per cent. of these were tuberculous; of 216 under 3 months only 4 were tuberculous. Transmission of the disease from the mother through the placenta is exceptional; family contagion explains almost all cases of infantile tuberculosis; transmission by milk or flesh of tuberculous cows plays but small part.

"Obstruction of Nose and Throat."—Cronin, of New York, states that these obstructions prevent growth of the individual and favor lodgment of tubercle bacilli; after removal of such obstructions the child improves in development and vital resistance.

"Placental Transmission of Tuberculosis."—Warthin, of Ann Arbor thinks that tubercle bacilli are particularly liable to pass from the vessels of the mother into the placental sinuses; the decidua and chorionic syncytium offer no special resistance; from placental lesions many bacilli may enter the fetal circulation. He believes that maternal transmission is quite likely to occur.

"Reaction Tests to Tuberculin."—Sill, of New York, says that the ophthalmic reaction is most valuable in children in diagnosing tuberculosis; is safe when used with care; is often more accurate than auscultation and percussion in early cases, and is satisfactory when it demonstrates a negative. Shaw, of Albany, considers the cutaneous test simple and easy of application, and absolutely without danger. He prefers it to the ophthalmic test. Holt, of New York, made a thousand tests; considers that none of them are as satisfactory as the results of sputum examination,

etc., and should not be depended on to the neglect of the others; the tests do not help us to distinguish between an active and latent condition, and should always be taken in connection with the general symptoms and physical signs. Heiman, of New York, also considers the cutaneous test; says that apparently it fails us in advanced cases; is sometimes positive in non-tuberculous cases. Chapin and Coffin state that the opsonic index varies with the severity of the disease and patient's resisting power; is of little practical value in diagnosis; may be of value in prognosis as showing resisting power to toxin. Fischer, of New York, says that a positive reaction of the cutaneous test means that we are dealing with a probable tuberculosis.

"For Detection of Tuberculosis in School Children."—Shoemaker, of Philadelphia, considers that the determination of loss of weight in a child is easier and of more clinical importance than vague physical signs; is applicable to all children.

"Prognosis in Pulmonary Tuberculosis in Children under 15 Years Old."—Craig, of Philadelphia, says that children under 5 years old do not respond to treatment as readily as older ones; white children appear to do better than colored; the extent of involvement of lungs gives the best indication for prognosis; a history of tuberculosis in the parents does not influence the prognosis for the child; a pulse rate over 120 means death, so also a respiration over 32; a temperature under 101 is not unfavorable; the results in children under 15 years are better than in those above that age.

"The Cost of Tuberculosis in the United States."—Irving Fisher makes the following statements: The total number of persons constantly suffering from active tuberculosis in the United States is about 500,000. Tuberculosis of all kinds causes one in every nine deaths; tuberculosis of the lungs, one in ten; one-third of these deaths is in persons between 20 and 30 years of age. The average age at death is for males 37.6 and for females 33.4 years. Eight thousand dollars is the very least at which we can reckon the average cost in money of one death from tuberculosis in the United States. For 138,000 deaths in one year the sum amounts to 1,100 million dollars. This is the gross cost. The cost of treating incipient cases at sanatoriums is repaid many times over, both to the consumptive himself, those dependent on him, and the public.

Glover estimates that if there were no tuberculosis there would be a saving in annual premiums for life insurance in the United States of 17,500,000 dollars.

"Economic Loss from Tuberculosis to New York State in 1907."—Willcox estimates it at 65 million dollars.

"Tuberculosis with Mental Defects."—Barr holds that the strong arm of the law is needed for strict quarantine and protec-

tion ; that penalties should be enforced against marriage and illegal cohabitation of consumptives.

"Tuberculosis as an Industrial Disease."—Hoffman states that between 25 and 34 years of age among certain employments 38.9 to 87.5 per cent. of deaths from all causes are due to consumption ; from respiratory disease alone 31.6 to 66.4 per cent. of deaths from all causes.

"Pulmonary Tuberculosis among Printers."—Miller states that the disease is very frequent ; printers are very subject to catarrh of the upper air passages ; disturbances of digestion are frequent and probably play an important rôle in determining the health of the workers.

"Tuberculosis among the Italians in the United States."—Stella says that the disease is spreading and offers suggestions toward controlling it.

"Tuberculosis among the Negroes."—Wilson holds that there is no innate tendency to the disease, but that the chief factors in causing the disease among negroes are ignorance and environment.

"Pulmonary Tuberculosis among Scandinavians."—Head states that among them pulmonary tuberculosis has a higher mortality than any other foreign population except the Irish ; is higher among the foreign-born Scandinavians.

"Tuberculosis Among the Indians."—Hrdlicka says that the condition is very bad ; that unless precautionary measures are taken along certain lines, the morbidity and mortality will be aggravated, and in many places the Indian will be annihilated.

"The Tuberculosis Problem in the Philippines."—V. G. Heiser believes that in tropical countries where tuberculosis and the hookworm disease coexist, the elimination of the hookworm will diminish the mortality from tuberculosis, and more so than any other measure so far tried.

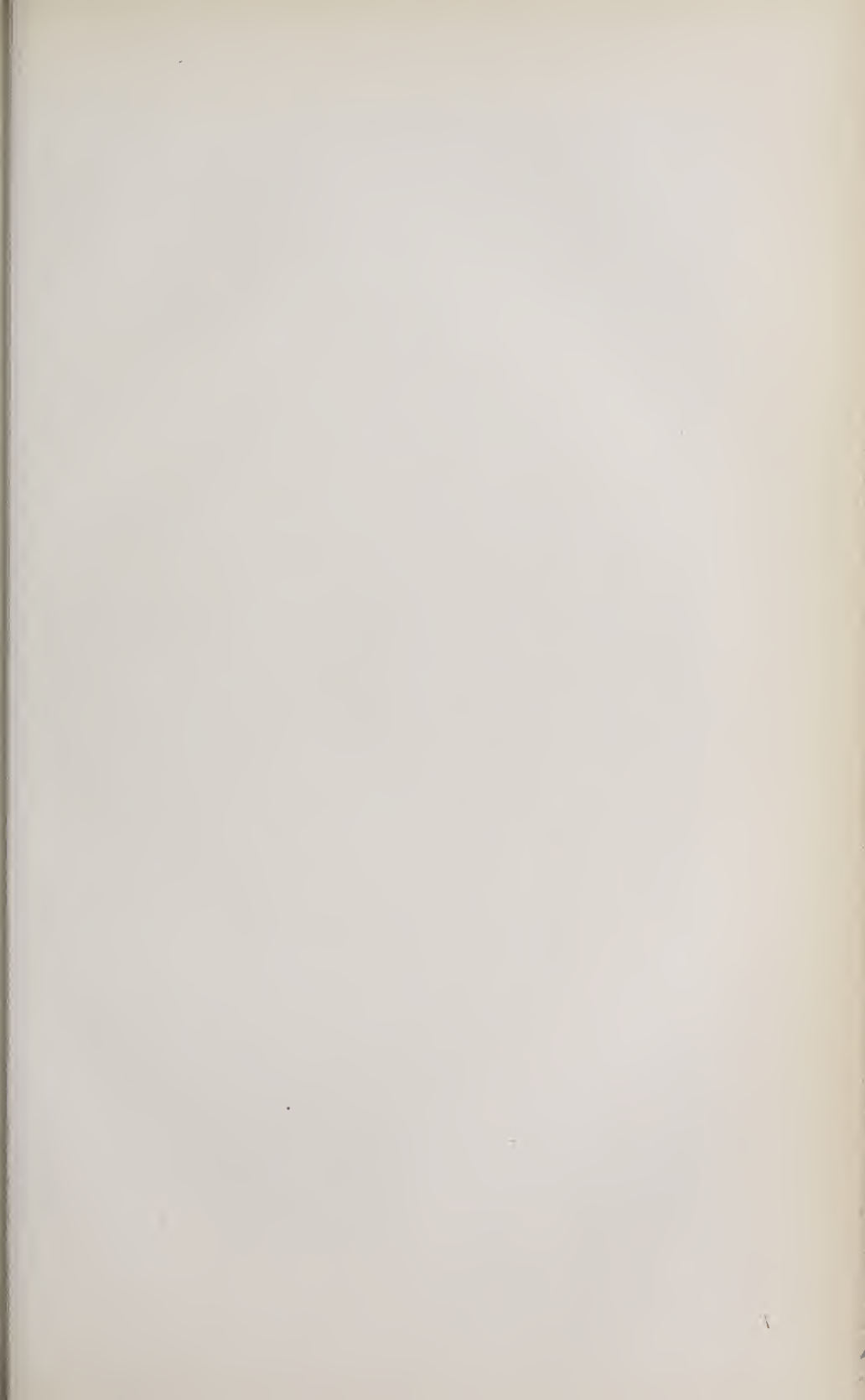
"Tuberculosis in Food-producing Animals."—Melvin, of the Bureau of Animal Industry, Dept. Agriculture, states that from 1893 to 1908 over 400,000 cattle were tested by State and Federal officers with tuberculin prepared by the Bureau ; 37,000 of these reacted ; of those reacting over 98 per cent., on post-mortem examination, were found to be tuberculous.

"Ophthalmic-reaction."—The Commission of the Société de Pathologie Comparée, through Dr. Bailliart, submitted the following conclusions : The reaction is usually without danger when applied to eyes free from tuberculous lesions ; is sometimes followed by mild, transitory accidents ; is not always proportionate to the gravity of the case ; is sometimes followed by a general reaction ; is often doubtful ; in cattle these doubtful reactions should be regarded as negative ; the reaction cannot take the place in cattle of the tuberculin inoculation ; the two together give in most cases the same results. White and McCampbell

agree to some extent with the report of the Commission ; they believe that the ophthalmo-tuberculin test will reveal tuberculosis in cattle at as early a stage as the usual subcutaneous tuberculin test. Moussu and Mantoux consider the intra-dermo reaction of tuberculin. They report that it causes a local thickening of the skin, edema in bovines and a red spot in hogs ; does not usually cause any general disturbance ; there are no special precautions to be taken ; it has all the advantages of the subcutaneous injection of tuberculin and none of the disadvantages of the ocular and cutaneous tests ; can be used with any domestic animal.—D. S. L.

BOOK REVIEWS.

TUBERCULOSIS A PREVENTABLE AND CURABLE DISEASE. By DR. L. A. KNOFF, N. Y. City. New York: MOFFATT, YARD & COMPANY, 1909. This is a 12mo volume of 426 pages, with 115 illustrations, of good mechanical and typographic execution. It is a popular presentation of the subject of tuberculosis along the lines of thought now dominating the minds of the enthusiasts in this field. While it necessarily seems somewhat elemental to a professional reader, the treatment of the subject is apparently well adapted to the comprehension of the laity, and to such (and even to physicians) the work affords an abundance of good advice, suggestions and discussions as to the prophylactic and therapeutic management of the disease, the relations of the different sections of the community to it, its economic aspects, etc. The work shows some tendency to repetition and discursive arrangement and, as might be expected, a note of somewhat exaggerated optimism. Tuberculous patients and their associates and those philanthropically inclined should find much of interest and value in the book.—J. B. NICHOLS.



WASHINGTON MEDICAL ANNALS

THE IMPORTANCE TO A COMMUNITY OF AN EDUCATED MEDICAL PROFESSION.

PRESIDENTIAL ADDRESS.*

BY EDWARD A. BALLOCH, A. M., M. D., President of the Society,
Washington, D. C.

In pursuance of the instructions given in our by-laws the duty devolves upon me of addressing the Society. Just why the Society has imposed upon itself this penance is beyond my understanding. Certainly I count it good fortune that this time of the year was selected. As our hearts are now inclining toward peace and good will the numerous defects in what I have to say will, I hope, be received with the charity which they demand.

Custom has set the precedent of alluding first to those matters that more intimately concern the Society itself. During the past year we have pursued the even tenor of our way with so little friction that there is nothing of major importance that I feel constrained to bring to your attention. There are, however, two matters with which I think that the Society might concern itself with advantage. In the first place, the membership of the Executive Committee seems to me to be larger than the interests of the Society demand. In the organization of this committee it was the intention of the Society that it should take over the work formerly done by the old Committee on Legislation, and, in addition, should look after the internal affairs of the Society. This work it did for many years with conspicuous zeal and fidelity. A reference to the History of the Society will show nearly three pages of titles of bills relating to medical matters that were considered

* Read before the Medical Society, December 8, 1909.

by this committee. There can be no doubt as to the importance of this committee in promoting much legislation that was good and in preventing much that was vicious. It having seemed wise to the profession to put this legislative work in other hands, there remains nothing for our Executive Committee to do but to consider matters that may, from time to time, be referred to it. In view of this restriction of its work it seems to me that a committee of fifteen is too unwieldy and that the membership of this committee might be reduced to five or seven without jeopardizing the interests of the Society.

The second matter to which I feel obliged to call your attention is rather more serious. It concerns the finances of the Society. Our worthy Treasurer, Cassandra like, has for many years been prophesying evil if the Society did not mend its ways in the matter of expenditures. It looks now as if his prophecies were in a good way to be fulfilled. From the various reports of the Treasurer I have constructed the subjoined table, showing the expenditures and balances of the Society for the years 1901-1908, inclusive.

	Expenditures.	Balances.
1901	\$1,130.80	\$2,270.31
1902	2,107.65	1,856.60
1903	1,481.80	1,676.44
1904	1,620.75	1,469.25
1905	1,449.17	1,896.79
1906	1,730.15	2,074.68
1907	2,649.17	1,419.13
1908	2,386.27	1,315.37

From this table it will be seen that the expenditures have increased and balances decreased in corresponding ratio. Of course much of this has been extraordinary expense, but I believe that until the Society recovers itself expenditures should be scrutinized with great care, and that a judicious economy will be very much in order.

Without desiring to reflect in the slightest degree on the Editorial Committee, it would seem that the MEDICAL ANNALS should have more advertising matter than it has, and thus be made self-supporting, or nearly so. It is not fair to expect the committee to do all this work. Every member of the Society

should do his part. We are all of us besieged by enterprising detail men from the various manufacturing and publishing houses. It occurs to me that it would help matters somewhat if we retaliated upon these men by suggesting to them the value of the advertising pages of the ANNALS as a means of reaching the profession of Washington. If each of us would constitute himself an advertising agent for the ANNALS it would have a decided effect upon the receipts of that publication and thus lessen the burden upon the Society.

Ever since its foundation the Society has been in quest of a permanent place for holding its meetings. The need for such a place must be apparent to all. The History of the Society mentions sixteen places in which it has met, and in some years it is felicitously stated that "it went wandering about and met wherever it could find accommodations." Sporadic efforts have been made to acquire land and erect a building for our exclusive use, but all have proved abortive. The effort now being made by the George Washington Memorial Association to erect in this city a building for the use of scientific and patriotic societies will, I believe, solve the problem and give us a place of meeting exactly suited to our needs and one where we may be certain of remaining. I hope that the plan which will be presented to you in detail this evening by a representative of the Washington Academy of Sciences will receive your earnest consideration and that our Society will not fall behind any other in its support of this project. The plan is feasible and its execution is in the hands of reliable and conservative men, so that I am sure that full confidence may be placed in any statements that they may make.

These are the only matters which seem to me to demand the attention of the Society at this time, and I will ask you to bear with me for the rest of the evening while I try to set forth some of the advantages which I conceive to accrue to a community from an educated medical profession.

Paraphrasing the dictum of an eminent German statesman about the Jew, we may say that every community has the doctor it deserves. Given a community where the standard of intelligence is high, and we shall find its medical advisers ranking with the other intellectual elements in that community, while the doctor whose lot is cast in a locality where the stimulus of intellectual rivalry is less keen, is liable to degenerate into the mere

medical automaton, than which there is no more saddening spectacle. He gets into a rut of routinism and stays there. The incentive to intellectual effort dies out for lack of fuel. On the other hand, I think it may be said, justly, that an educated medical profession has the power to raise the general standard of intelligence in a community. It cannot do so, however, without the coöperation of that community. There must be on the one side the desire to help and on the other the desire to be helped. To the doctor, more than to any one else, is it given to come into intimate contact with the individuals of a community. Now, as no one can be insensible to his environment, one of two things must happen: either the medical profession will raise the individual intellectual level of the community to its own standard, or that standard will be lowered to that of the community in general. The former is the ideally-possible result, the latter too often the actual outcome. As a condition precedent, however, there must be intellectual ability and education on the part of the profession. Nothing so smothers one's intellectual aspirations as lack of contact with mental peers. As physical friction generates fire, so mental friction generates thought. It does not follow that this contact should be with those in the same intellectual field; indeed, probably it is better not so; but there should be opportunity for contact with those of equal or superior mental capacity if we are to grow. It is, perhaps, a just reproach to our profession that its members confine themselves too exclusively to purely professional lines of mental endeavor. Just as congenial company enhances the pleasure of a dinner, so good intellectual company gives a mental stimulus that is of marked benefit to any one. Lack of this stimulus results in intellectual vegetation and narrowness of mind. Therefore, I believe it to be an excellent thing for a medical man to be interested in matters outside his own profession. Should we not broaden our minds and endeavor to keep in touch, at least, with what is going on in other fields of science, in literature and in art?

Let us consider more particularly some of the advantages which we conceive to accrue to any community from having an educated medical profession. First, in the matter of sanitation and preventive medicine the educated physician can be of immense service to the community in which he lives. A proper appreciation on the part of the doctor of his responsibilities in this respect

will carry with it the obligation to give to the public the benefit of his training in matters of hygiene. No man lives to himself alone. One of the proudest boasts of our profession is its altruistic spirit, and if by reason of superior knowledge we have a clearer view than our fellows of what should and what should not be done in matters of hygiene that affect our environment, are we not bound to put that knowledge freely at the disposal of others?

The pursuit of health seems to be the fad of the hour. Newspapers and magazines are full of articles pretending to instruct their readers how to get well or to keep well, and numerous self-styled professors are fattening their bank accounts at the expense of the vain and the credulous. One would infer from the very positive tone of most of this newspaper hygiene that death was a totally unnecessary accident and one that could be avoided if only the proper course of exercises could be devised. I need not remind an audience such as this that much of this newspaper advice is useless and some even harmful. The point is that, unless properly guided, the public is prone to run after false gods, and that it is the duty of the medical profession to sift the good from the bad and to show the public that while diet and exercise are very good things in their way they do not constitute the entire creed of hygiene, and that they should be adapted to the individual rather than the individual to them.

The past decade has witnessed the origin and rise of several cults having for their basis mental suggestion in one or another form. While it is not denied that good is done in many instances it is asserted that more harm than good results from an indiscriminate and unreasoning use of this agent.

It is as true now as when Holmes wrote it that it is a tendency of the human mind to get hold of a partial or half truth and to magnify and extol it as being the whole body of truth.

The time has come for an authoritative statement of this entire matter of psychotherapy. Its limitations should be exactly defined. Who can do this better than the trained medical man? Certainly not the clergy, whose entire training predisposes them to credulity, and who are ignorant of the exact tests demanded and applied by the man of scientific training. The public has the right to know what is true and what is false in this and kindred matters, and it has the right to demand that we give it to

them or cease our strictures upon those who are using it for their own purposes, good or otherwise.

The organized medical profession should be the court of arbitration in all matters of a public nature involving subjects with which it is supposedly familiar. This position can be attained and held if, in the first place, the profession is thoroughly educated and if, in the second place, it will forget minor differences and present a solid front in such matters. An opinion by a divided court is never so authoritative as one in which all the judges join. The more careful the training of the medical man the more likely is the profession to act as a unit.

The physician who is not content with alleviating such cases of illness as may come under his care, but is also watchful and intent to prevent the occurrence and spread of preventable disease, is a boon to any community, and he is not fulfilling his highest function unless he has these matters very much at heart. The success of the campaign against tuberculosis, for instance, depends for its success entirely upon the zeal and intelligence of the individual practitioner. The generals may outline the plan of campaign, but unless the private soldiers carry out those plans with understanding and fidelity all the work of the generals will be futile and of no avail. Need we say that the better educated the individual the better will the plans of the leaders be understood and carried out? It follows as a corollary to the above that in such a community as we have in mind the hands of the health authorities will be held up and their efforts to prevent disease be appreciated and forwarded. The health officer in any community has a thankless task at best, but when his efforts are thwarted by a hostile and unintelligent body of medical men his lot is unenviable indeed. Once he is assured of the active support of his confrères he becomes an agency for the betterment of the community second to none.

In matters of education, also, the physician should hold a more weighty place than he does. There is room here for improvement. Educational authorities no doubt mean well and do their best according to their lights, but too often our schools are conducted and our children taught in utter disregard of the principles of hygiene and common sense. The proper heating and lighting of school buildings are left to the architect, while we leave it to boards of education to determine the amount and

character of the mental training of pupils. I presume that it is inevitable in any system of public-school instruction that pupils should be graded, but I have thought that in some way provision should be made for the individual instruction of backward pupils. In these matters the doctor has a twofold interest, as a citizen and as a parent. To those of us concerned in the after training of public-school graduates there seems to be a tendency to try to teach too many things at the expense of thoroughness. At all events, I can assert, without fear of contradiction, that a very much more thorough instruction in the construction and proper use of the English language could be given with decided advantage to all concerned. Much more might be said along this line, but I take it that enough has been said to establish the contention that an educated medical profession is a power for good in any community.

Having tried to show some of the advantages incident to an educated medical profession in any community, it is pertinent to inquire how these advantages may be attained. Most important in this connection is the education of the physician, preliminary and professional. What amount and character of training will fit him best to take in the community the place to which he is entitled? As a general proposition, the broader the preliminary education the better. If he have the benefit of college training before entering upon his medical career, so much the better; but I am not one of those who consider such a training to be an essential prerequisite to the study of medicine. The general culture and habits of correct thinking that come from college training, properly used, are good things and not to be despised, but to say that no one is capable of the study of medicine without such training is, to my mind, going further than the facts will warrant. I believe that any one with a high-school education, supplemented by a year of college work in biology, chemistry, physics, French and German, is sufficiently equipped for the study of medicine. If I had the outlining of a course preliminary to medicine I should include, in addition to the above, thorough instruction in free-hand drawing as an important element of that course.

In medicine we have to deal with two types of minds, the scientific and the practical. The former is interested in medicine as a science and is attracted by the purely scientific branches of medical education, such as physiology, bacteriology, embryology,

etc. To the latter type of mind appeal the more practical branches of our art, those that have to do more particularly with the healing of the sick. To them the scientific side of medicine is but a means to an end. Needless to say, the latter class far outnumbers the former, yet, to me, there seems to be a tendency in certain quarters to shape medical education too much along purely scientific lines. We must not lose sight of the fact that we are training students not to be original investigators or to conduct research laboratories, but to take intelligent care of persons who are ill and suffering. To my way of thinking, actual bedside training during the last two years of the course is worth all the theory in the world. We are all of us acquainted with men that can pass any kind of an examination and can give descriptions of typhoid and pneumonia that are classic, and yet are completely at sea when it comes to the actual recognition and care of disease. It is this actual, practical training that our students need, the more highly scientific training being reserved for those showing capacity and inclination for original work.

Let me not be misunderstood. I have no desire to belittle medicine as a science and I am trying to show that there is room in our ranks for both types of minds, but that those interested in purely scientific medicine are so few, compared with the others, that the interests of the many should not be sacrificed to the betterment of the few. In closing this branch of my subject let me say again that I yield to no one in recognizing the benefits of college training as a preliminary to the study of any profession, but I am none the less sure that it is not absolutely essential to the making of a good and safe practitioner of medicine.

In the second place, I regard a good medical society as a great factor in keeping alive the intellectual faculties of the physician, and he who neglects this means of continuing his medical training does so at the risk of degenerating into the mere medical tradesman. The American Medical Association has recognized this fact and, in encouraging the formation of county societies, is doing a work of great and lasting benefit to the profession. This work alone would be justification enough for the existence of the Association, and, while its benefits may not be immediately apparent, it is bound to result in a stronger and more united profession. Surely nothing can be more stimulating to the physician than the intellectual growth engendered by meeting his fellows

in such societies, and nothing more tends to dissipate the asperities and petty rivalries of our profession than such meetings. The medical society is the great mixing-vat into which each one of us puts his own ideas on any subject. After the heat of discussion has been applied there comes out a clarified solution representing the best thought of all. Show me a community having a live and active medical society and I will show you one in which the medical profession respects itself and is respected accordingly. I pause here to say that it is my firm conviction that there are very few medical societies that can meet every week and maintain the high level of papers and discussions that our own Society does. I am sure that I am making no mistake in attributing to the indefatigable zeal of our Corresponding Secretary our excellence in this respect. Long may he be spared to urge us to continued effort. As a means of post-graduate training nothing exceeds a good medical society, and a medical man can make no greater mistake than to neglect such an advantage. The man who can attend a meeting of any kind of a medical society and go away without some addition to his stock of knowledge must be dense indeed, unless, perchance, he is one of those individuals so unfortunate as to consider his own particular way of thinking to be the last note in medical wisdom.

To no one is the need of a general medical society greater than to those of us engaged in special lines of work. We are too prone to think that our own special branch is all that there is to medicine, and we need the medical society to remind us that every other branch of our profession is as active and alert as our own. Being a surgeon I can afford to say that surgery has been perhaps the greatest sinner in this respect. Therefore it gives me real pleasure to testify to the great benefit that the medical society has been to me personally in enlarging my mental horizon, and I believe that each one of us would be better in his own special field of work for a faithful attendance upon the meetings of our Society.

Let me pause here to pay, as a surgeon, my tribute of respect to general medicine. I believe that the glamor that has surrounded the art of the surgeon since the dawn of asepsis has obscured the vast achievements of general medicine. Internal medicine lacks the spectacular accompaniments of surgery. It has no need for marble operating rooms or special uniforms, and

in its work the autopsy table takes the place of the operating table; but none the less surely and faithfully it does its part, looking to the future and seeking its reward in a healthier and happier race of mankind. The internist does not come before us and say, "Behold this woman that I have separated successfully from a two-hundred-pound fibroid," nor does he say, "I was not called into this case until late, but I did the best I could and anastomosed the pyloric orifice to the anal sphincter, and the patient, although somewhat short-circuited, is doing quite well." No, internal medicine does none of these things, but it shows us yellow fever a thing of the past; diphtheria almost a minor ailment; smallpox absolutely preventable; the morbidity and mortality of typhoid reduced; the mortality of epidemic cerebro-spinal meningitis reduced from eighty-five to twenty per cent.; and it assures us that in time tuberculosis will be as rare as smallpox is now. All this has been done quietly and without flourish of trumpets, but it is none the less good and effective work.

It is, then, the function of the medical society to bring home to each of us the knowledge of what all are doing to advance our art, and any one that neglects this means of widening his professional horizon does so at the risk of becoming narrower and narrower as the years go on, until he is in danger of becoming a medical mechanic rather than an educated physician.

As we all learn from the society, so there is an equal obligation upon us to give of our best to the society. Each of us can add to the general sum of knowledge and it is his duty to do so. Medicine is a jewel of many facets, and the point of view makes a great difference in its luster. Each one of us has his own viewpoint, and it is his duty to advocate that viewpoint and to try to show that it is the best from which to get the most favorable results.

I want to bring this home to the younger members of the Society more particularly. It is not only your privilege but your duty to make yourselves felt in this Society. I am aware that many of the younger members feel diffident about presenting their efforts to the general Society. They labor under the misapprehension that the older members are here for no other purpose than to overwhelm with adverse criticism any young member rash enough to present a paper before the Society. I

assert, without fear of contradiction, that nothing is further from the truth. Nothing is more pleasing to the older members of this Society than to see younger members giving evidence of promise. Criticism you may get, I grant you; but I can say truthfully that during my connection with this Society I have never heard an older member discuss the effort of a younger in any but a legitimate and proper way. I can say, too, that on many occasions I have known members to refrain from discussion from fear of wounding the feelings of a younger member of the profession. As I have said already, any medical question admits of many points of view, and it is not fair to assume that because one man looks at a subject from a point of view differing from yours that he is dogmatic and overbearing. Again, did it ever strike you that the paper that is criticised the most is the one that has the most in it? It means that the writer has said something with life in it. No one criticises platitudes, and it seems to me that criticism, even the most adverse, is preferable to indifference. Let me, then, again urge the younger members to do their parts. In the natural course of events the management of the Society must devolve upon you, and you must make yourselves worthy of the trust.

This Society is about to enter upon another year of its existence. For nearly a century, with varying fortunes, it has striven to maintain the dignity of our profession and to keep burning the beacon of medical thought. Should not each one of us resolve that the coming year shall show no deterioration in the work of this body, and that so far as in him lies he will do his utmost to sustain the traditions of this venerable, honorable and beloved Society?

DANGER IN THE USE OF SALT SOLUTION IN FEVER.—The danger consists in using an excess of the salt, because in some fevers the salt is not sufficiently excreted by the kidneys and accumulates in the tissues. The patient requires water, but not salt; the free use of water assists in the elimination of salt, both by kidneys and skin.—*Modern Medicine*, Nov., 1908.

FOUR YEARS IN TUBERCULOSIS DISPENSARY
WORK.*

BY B. M. RANDOLPH, M. D.,

Washington, D. C.

The following is an attempt to present a statistical analysis of cases seen by me during the four years ending June 1, 1909, as one of the physicians to the Dispensary of the Washington Association for the Prevention of Tuberculosis. My service has been once a week, there being four other similar services in this dispensary, as well as special tuberculosis clinics in the various other hospitals of the city. Although my work has constituted but a small percentage of that done in the city, I think that it has been sufficient, both in the number of patients dealt with and in the length of time furnished for observation, to make it worth while to present the statistics and the lessons they seem to teach.

It is my purpose to discuss these figures only in their relation to the part played by the dispensary in the fight against consumption among the poor in their homes, as the problem presents itself in the District. I shall avoid the consideration of clinical manifestations of the disease, except in so far as they bear upon its early recognition.

My records are not as complete as they should be, owing to lack of time and assistance in preparing them. I was often alone, and time being short and patients numerous, the latter were attended to at the expense of the records.

I have histories of 231 cases that applied for examination or treatment; 151 had consumption, 7 were doubtful and 73 were not tuberculous. The cases recorded as doubtful were patients in whom the diagnosis could not be made at a single examination, and who did not return for reexamination.

Patients recorded as having nothing the matter with them were those who had been exposed to infection and were brought to the dispensary through the very wise policy of examining all persons, especially children, who live in a house where there is a consumptive. Several unsuspected cases have been detected in this way.

* Read before the Medical Society, October 27, 1909. Published also in *Old Dominion Jour. Med. and Surg.*, November, 1909, p. 298.

Of those who were free from tuberculosis the following diagnoses were made :

Tonsilitis (with or without adenoids).....	9	Adenitis.....	1
Valvular Heart Disease.....	5	Alcoholism.....	1
Syphilis.....	6	Cystitis.....	1
Adenoids.....	4	Diabetes Mellitus.....	1
Asthma.....	4	Dysentery ..	1
Bronchitis.....	4	Laryngitis.....	1
Cirrhosis of Liver.....	3	Malaria.....	1
Constipation.....	3	Myocarditis.....	1
Aneurism	2	Pelvic Inflammation.....	1
Arterio-sclerosis.....	2	Post-typhoid Debility.....	1
Intercostal Neuralgia.....	2	Prostatic Hypertrophy.....	1
Nephritis.	2	Tobacco Poisoning.....	1
		Nothing.....	12

I have taken into consideration race, sex, age, occupation, the presence of a history of exposure to infection, the duration of the disease, the influence that brought the patient to the dispensary, whether the diagnosis had been made previously, the presence or absence of bacilli in the sputum, the initial symptoms, the stage reached by the disease, the complications, the number of visits made by each patient, and the results of treatment.

There were 66 males and 89 females; 87 were white and 64 colored. When we consider the relative incidence of consumption in the District (white 1, to colored $3\frac{1}{2}$), these figures illustrate very fairly the indifference and neglect of the negro in his attitude to the disease.

AGE—Minimum, 6 years; maximum, 65 years.

Between 5 and 10 years.....	2	Between 30 and 35 years.....	26
Between 10 and 15 years.....	10	Between 35 and 40 years.....	40
Between 15 and 20 years.....	8	Between 40 and 50 years.....	22
Between 20 and 25 years.....	17	Between 50 and 60 years.....	7
Between 25 and 30 years.....	24	Over 60 years.....	2

There is a special clinic for children, which probably makes the percentage among children lower than it would otherwise be. I have been much impressed with the large number of cases over 40 years (31, or over 20 per cent.). I believe that as a rule these middle-aged and elderly cases are those in which the disease has existed for a long time. Many who are infected in early life recover without the disease being recognized. In others resistance is good, and while they are never healthy or robust, they

are able to hold the disease in check during the more vigorous period of life, recurrence taking place or resistance giving way when the natural deterioration of middle life begins.

OCCUPATION.—Little of definite value is furnished by reviewing the occupations of these patients, except to confirm the well-established fact that consumption is an indoor disease. I have noticed a large number of laundresses among the colored female patients, but as most colored women who live in their own homes are laundresses this probably does not indicate any special predisposition for this occupation. I have also noticed that there is nothing so certain to produce disastrous results in consumptive women as a return to laundry work. The Hebrews are known to have a better resistance to tuberculosis than other races. I have had several Hebrew patients, and they have in every instance been tailors who do more or less mending, cleaning and pressing, thus handling used or second-hand clothing. This suggests very strongly clothing as a means of carrying infection; this must not be too hastily assumed to be the case, however, as this class of tailors is very poorly paid, closely confined and subjected to long working hours.

EXPOSURE.—The most interesting and important figures relate to the history given of exposure to infection. Out of 151 cases 85, or 56 per cent., give a positive history of house association for a considerable length of time with one or more persons having consumption. There is no guess work about these figures. Doubtful cases are not included. The patient has stated in every case the specific instance, generally in the family, sometimes as nurse, sometimes through association at work, and twice where persons have moved into a house where a consumptive had recently died. Now it is evident that there are very many cases of exposure of which the patient is ignorant and can therefore give no history. Occurring in childhood it would have failed to impress, or have been forgotten. We have all seen cases of intelligent and highly educated persons who have forgotten important things in their past, and this is much more frequent, of course, among the ignorant. Again, one may have been exposed without knowing it. Men who work on contract jobs, traveling about the country, living in temporary quarters or cheap boarding houses, are often exposed to infection of which they know nothing. It is by no means uncommon for a patient who fears he has con-

sumption, to lie about exposure in order to keep the physician off the track, especially if the patient believes it to be hereditary. One patient of mine denied any history of exposure, and I afterward found out that she had nursed and slept regularly in the bed with her mother for three years previous to the death of the latter from consumption. Poor persons who often change their dwellings run constant risk of moving unwittingly into an infected house, in which case they could not give any history of the exposure to which they have been subjected. This is especially true of the negroes, and unhygienic as their dwellings generally are, the change is rarely for the better. I have known one family to occupy three houses in nine months. If case histories could tell the whole truth the percentage of such exposures would certainly be very much higher than that given here, and would, I believe, not fall far short of 100 per cent. Study and experience have brought to me the conviction that pulmonary tuberculosis may, for all practical purposes, be considered to be always due to exposure for a considerable length of time, in a house that harbors or has harbored a human consumptive.

DURATION.—The time assigned by patients since the beginning of their disease varies from three weeks to forty-three years. The maximum was in the case of a man who was discharged from Sherman's army in Georgia in 1864 with a diagnosis of consumption. He had been half invalid ever since, being able to work intermittently at his trade of paper-hanger. He improved decidedly while under my observation, and finally moved to a distant State to live with one of his children. A rather careful inquiry has led me to believe that the duration of the disease, especially among the poor and ignorant, is much greater than is stated by the patient. These persons ignore minor symptoms, such as slight cough, deficient appetite, lassitude, loss of weight, digestive disturbance and vague pain. An acute exacerbation is assigned as the beginning under the name of grippe, pneumonia, pleurisy, etc. The consumption that "follows" typhoid fever, whooping cough, measles, is often a preëxistent lesion, which the organism is able to keep within bounds until the intercurrent disease breaks down the resisting power. I believe that pulmonary tuberculosis frequently exists without incapacitating the patient to the extent of invalidism; that such a condition may exist many years, characterized by slight exacerbations and re-

missions ; that recoveries and recurrences may succeed each other indefinitely, until advancing years, intercurrent disease, misfortune or poverty breaks down the resistance, or else the organism gets the best of the infection, and permanent recovery takes place. Many cases are recurrences or relapses when the diagnosis is first made.

In an attempt to ascertain the effect of the educational work carried on, a record has been kept during part of this time of how patients were influenced to come to the dispensary. As far as these records go they show that there have been sent by physicians, 28 ; by agents of the Association, charity workers or nurses, 32 ; by other patients, 9 ; by newspaper notices, 6 ; by employers, 3 ; by clergymen, 1.

In thirty-eight cases it was ascertained that the diagnosis had been previously made. I do not believe that this by any means represents the actual number so diagnosed. Patients lie more frequently on this point than on any other, generally to excuse their failure to follow directions which have been given them. But physicians, even when they know the disease is present, are often not explicit in telling the patient. This softheartedness is always false kindness to the patient, whose chance of recovery lies in a full realization of his condition. Moreover, this practice reacts unfavorably on the reputation of the physician himself, condemning him both in the eyes of the patient and of the physician who examines the case later.

In assigning the stage of the disease I have endeavored to follow roughly the classification recommended by the National Association for the Prevention of Tuberculosis. As the only object in any classification is to indicate the prognosis, any which does not take into consideration the individual equation of the patient and his reaction to his environment must be imperfect. My cases are as follows :

Stage I	28
Stage II.....	61
Stage III	40
Unclassified.....	22

The unclassified cases are generally those which made only one visit, and did not give opportunity for sufficient study to properly assign them.

BACILLI.—There are records of seventy-five cases in which one or more sputum examinations were made. Of these thirty-six were positive and thirty-nine negative. Some examinations were made and not recorded, these being generally negative. Many advanced cases were not examined, as the diagnosis was obvious, and, because time was lacking, bacilli were assumed to be present. Many diagnosed on the first visit were told to bring the sputum on the next visit, and never returned. I do not think that the sputum examination is entitled to the important place it holds. Of course the discovery of bacilli is a very easy and comfortable way to settle the diagnosis. But practically every case of pulmonary tuberculosis ought to be recognized before the bacilli appear in the sputum. The prognosis in cases treated before the breaking down of tissue begins is generally excellent for complete and permanent recovery. Where tissue destruction has taken place prognosis is not nearly so good for any kind of recovery, and for a complete and permanent restoration is not good at all. Too great reliance on sputum examination leads physicians to neglect the proper study and analysis of the clinical history and physical signs. Furthermore, patients naturally get to consider it the final test, and it becomes difficult to induce them to accept the diagnosis at the time when it is most important for them to do so. I recall but one case in my experience in which bacilli were found in the sputum that did not present other evidences of the disease from which the diagnosis could be made.

In order to educate the public it is important to know the earliest symptoms of which these patients complain. As they all occur in other disorders, they are habitually ignored. But where they occur in trivial maladies they do so only for a short time. It is only in tuberculosis or some other serious disease that they persist without apparent cause. A cold that does not run its course in one or two weeks ceases to be a cold, and demands investigation. Unusual lassitude, loss of weight, impaired digestion, constipation, pain in the thorax, amenorrhea, which have not existed previously under similar conditions and which do not respond to the correction of unhygienic conditions, are not trivial matters, merely because the inconvenience attending them is slight, for they are generally the introduction to organic disease, most often tuberculosis. The beginning symptoms given by these patients are as follows :

Cough	35	Pain in Thorax.....	3
Cold	20	Throat Trouble.....	3
Pneumonia	8	Digestive Disorders.....	2
Hemorrhage.....	6	Typhoid Fever.....	2
Weakness	6	Pleurisy.....	1
Grippe	3		

These figures, especially those in which cough and cold are given, are very unreliable. One or the other (they both mean the same thing) is nearly always given by the unintelligent, invariably by the negro. This is due partly to indifference to minor symptoms and partly to the lack of the kind of mental capacity and trained memory necessary to give a good history. The negro does not see the purpose of the investigation and cannot be induced to make a mental effort which is not habitual to him. This is most unfortunate, for a correct history is of the greatest importance in making the diagnosis and prognosis, as well as in compiling statistics which are of real value. It is only from the more intelligent classes that the initial symptoms can be obtained.

Among the symptoms associated more particularly with tuberculosis, the following are noted :

Sweats—Present in 85 ; absent in 38.

Hemorrhage—Present in 52 ; absent in 65.

Amenorrhea—Present in 11 patients of menstruating age.

Metrorrhagia—Present in 3 patients of menstruating age.

Sweats are often forgotten, ignored, or may occur without the patient being sufficiently aroused to notice them. Hemorrhage is frequently denied, unless copious enough to alarm the patient. There is a deep-rooted tendency in women to deny the slightest deviation from perfect health in their menstrual function.

I wish to impress a very important fact, *i. e.*, that misstatements, lapses of memory and inaccuracy can often be corrected by reviewing the history at subsequent visits. Record of the anamnesis is generally made at the first visit, when the physician is a stranger to the patient, when the latter is on the defensive and when the desire not to be found tuberculous gives an unconscious, if not a deliberate bias to the evidence. If the practice is made of returning to the history after the patient's confidence is

gained, after treatment is established and the benefit resulting is appreciated, after the memory has had time to respond in the interval to the stimulus furnished by the questions of the first examination, many errors will be corrected. I have frequently had patients themselves volunteer these corrections.

The number of visits made by the individual patients throws more light on the problem as a whole, and on the possibilities and difficulties of dispensary and home treatment, than all other statistics combined. Of the 151 patients 46 made only one visit.

2 to 5 visits.....	62 patients.	31 to 40 visits.....	2 patients.
6 to 10 visits.....	20 patients.	41 to 50 visits.....	1 patient.
10 to 20 visits..	11 patients.	Over 50 visits.....	2 patients.
21 to 30 visits.....	7 patients.		

Thus it will be seen that 108 of the 151 patients did not make more than five visits to the dispensary. It is true that some of these patients went to the hospital, some sought another climate and a few went to private physicians, but the number of such exceptions is not large enough to affect materially the meaning of these figures. From the standpoint of the effectiveness of dispensary or home therapy, these 108 cannot be considered as having taken treatment. They illustrate most forcibly the chief cause of the failure in the therapy of consumption, namely, lack of moral stamina. They belong to that large class of weak and ignorant persons who cannot be helped because they have not the courage, patience or tenacity of purpose to help themselves. It takes character to get well of consumption, to meet the setbacks, the discouragement, the depression and the loneliness which are inseparable from this disease without giving up. I have profound respect for those patients who have the pluck to carry the fight through to the finish.

Though the dispensary has not accomplished anything in restoring this class of patients to health it has performed a valuable service to the community in identifying them as sources of infection, so that they may be watched.

In my report of results I have included only the 43 patients who have made more than five visits, a little over 28 per cent. of the total. Deaths are not recorded, as they occurred generally some time after the patient had ceased to come to the dispensary.

Stage.	Cured.	Arrested.	Improved.	Not improved.
I	4	5	3	..
II	..	3	14	3
III	..	..	7	4
Total.	4	8	24	7

The cured cases have been discharged from observation with all their symptoms removed, and have been ascertained to have been at their normal avocations for a year or more without any recurrence of trouble. Those arrested have regained their maximum weight or more, and have been free from symptoms and physical signs of active disease for several months. Some have returned to work and are able to carry it on without hurt, though still kept under observation. One relapsed and died from overwork, exposure and dissipation. Two are still under treatment, because it is not felt that it is yet safe for them to go to work. One, after being well about six months, became pregnant. She also had nephritis, which will probably be fatal.

My records do not give the complications as perfectly as I could wish, but the following are noted :

Tuberculosis of Larynx.....	4	Tuberculosis of Liver	1
Pott's disease.....	3	Diabetes Mellitus.....	1
Syphilis.....	2	Duodenal Catarrh.....	1
Alcoholism.....	2	Graves disease.....	1
Fistula in Ano.....	2	Imbecility	1
Pregnancy.....	2	Nephritis	1
Pelvic Inflammation.....	2	Tonsillitis	1
Hip Joint disease.....	1	Asthma and Mitral Insufficiency...	1
Tuberculosis of Intestines.....	1		

Tuberculous pleurisy is not classed as a complication, being regarded as an intimate part of the lung disease.

Through the help of a number of ladies, members of the Church of the Covenant of this city, a tuberculosis class has been conducted along the lines laid down by Dr. Joseph Pratt, of Boston. This class is now fifteen months old, and is composed of white patients in all stages of the disease. They are included in the foregoing statistics. Of first-stage cases one is cured, three arrested ; of the second stage one arrested, three improved ; of the third, three improved, one not improved. These results could be

equaled by the regular dispensary, if the patients could and would follow the same regimen for the same length of time.

We have in the District two definitely distinct problems, one presented by the tuberculous negro, the other by the tuberculous white. The prospect for success with the former seems to me small. This is not because of any inherent racial susceptibility or lack of resistance to tuberculosis in the negro. Owing to the large comparative incidence and mortality of the disease among them a great deal has been said about race susceptibility, and learned ethnological explanations thereof suggested. I believe that no such thing exists. If a like number of whites were subjected to the same hygienic conditions and frequency of exposure as exist among the negroes the incidence and mortality would be quite as high. Our negro consumptives, during the time they have obeyed orders, have made fully as rapid and as sure progress as have the whites. They never, however, take the treatment long enough. As soon as they feel better they cease following instructions, return to work, unhygienic conditions, irregular hours and dissipation. No advice, no persuasion, no gloomy prognostication, no citation of example can control them. They agree with all you tell them, profess gratitude, promise everything, and as soon as they get into their own homes do as they please, relapse and die. It is not a lack of physical resistance, but lack of moral qualities, that is responsible for the ravages of the disease in this race.

Among the whites the outlook is more encouraging. With the exception of a certain proportion of incorrigibles and derelicts, chronic subjects of attention by the police and charity, the white consumptive can be relied on to coöperate in his cure, as far as circumstances will permit. He can grasp the idea that his cure rests on his own patient effort. He can draw conclusions from the examples he sees of patients who improve as long as they obey orders, or who suffer from disobedience. The chief difficulty is to make him realize in the early stages that his condition is serious enough to necessitate giving up work and devoting himself to getting well. Once the sacrifice is made he can generally be held under control.

Too great a proportion of effort in the struggle against tuberculosis is being devoted to specific immunization, sanatoria, climate, etc., and far too little to home treatment. I think we may

say that climatic or sanatorium treatment is not available for more than 20 per cent. of actual cases. Whatever provision we may make we will be unable to induce the majority of consumptives to go to a public sanatorium or hospital until the prognosis is hopeless. This, of course, is not treating him. Most of the cases are and always will be in the home. It is in the home that the greatest effort is needed, that the patient is most amenable to treatment, that the family ties remain unbroken, where the man does not feel that he is being pauperized, and where the work can be done at the least expense. One of the great advantages claimed by sanatoria is that the patient when well returns and acts as a missionary of good hygiene in his home. His influence is nothing compared with the daily object lesson of a patient getting well at home.

Another very important point in treating the consumptive in his home is that we have the focus of infection and those exposed to it continually under our eye. It is impossible to exaggerate the importance of disinfecting the infected house at the earliest possible moment, and not to wait, as is now done in the District, until the patient dies, and then disinfect the room he died in, ignoring the rest of the house which he has been infecting for months or years. Such disinfection is worse than useless, for it gives a false sense of security. Foci of infection ought to be hunted down and made harmless at once, irrespective of death certificates.

I have presented this paper to show not only what can be done by treatment of the poor at home, but what must be done. The work done by tuberculosis classes here and in other cities represents the best results we can expect, and certainly they are good. I believe this method is the one along which we ought to develop our campaign.

Acknowledgment is here made to Drs. E. W. Watkins, Francis Harrington and A. L. Hunt, who were associated with me at various times, and who have shared in the work presented in this paper.

Dr. Kober said that Dr. Randolph had stated a number of facts which it would be well to emphasize.

The further confirmation of the part house infection plays in the dissemination of tuberculosis, derived from Dr. Randolph's study, recalls Pflügge's experiments by which he demonstrated

that the danger does not reside so much in the inspissated sputum nor in the dust of the house, but that contagion is disseminated by "droplet infection"—the spraying of bacteria-laden saliva and pharyngeal mucus by the acts of coughing, laughing and sneezing. These experiments clearly indicated the value of isolation of the consumptive patient in a separate room or separate bed. They also clearly indicated the value of systematic disinfection. Notwithstanding the difficulties of curing tuberculosis among negroes, as indicated by Dr. Randolph's statistics, much can be done to prevent the disease among these people. The improved situation as to the incidence of tuberculosis among negroes as shown by the recent reports of the Health Department has not been due to education so much as to improved sanitation of a general nature; it is gratifying to contemplate the figures: the death rate from consumption in negroes being 6.9 per thousand in 1878 and 4.5 per thousand in 1907. It is gratifying to learn also that the high rate of incidence among negroes is not a matter of racial predisposition; it is well to know that they respond to good treatment and that with sanitary surroundings they are normally resistant to infection.

He expressed appreciation of Dr. Randolph's paper and said that the statistics presented therein represented work of high economic value in that it was directed toward restoring helpless men and women to wage-earning capacity.

Dr. E. L. Morgan called attention to the fact spoken of by Dr. Kober that tuberculosis has been already much reduced in frequency by good sanitation; as this improvement took place before the enactment of the registration law, Dr. Morgan hoped that it would not be ascribed to the operation of that law. He remarked also that the ancients advised the treatment of consumption by the administration of eggs and milk; that they recognized the contagiousness of the disease; and that the Talmud forbade the eating of tuberculous meat.

Dr. Williams said that as an ex-consumptive he wished to testify to a most important item in the armamentarium of the patient, viz: the need of grit—grit not so much to do what is directed shall be done, but to resist doing what well-meaning advisers insist shall be done. In his own pursuit of health he went to the open country of South Africa, where all men drank whiskey; he was told that the use of whiskey was necessary; he resisted the advice, and got well; those who drank whiskey died. As to fresh air, he had been considered insane upon the subject. The poor are usually too ignorant to resist advice against the admission of fresh air into their rooms, and such advice coincides with all their traditional ideas. He agreed with Dr. Kober that the general sanitary progress in the matter of increased cubic air space in dwellings has done much to reduce the incidence of consumption; but the education of the public must be added so as

to make it the general practice to admit fresh air in abundance to all habitable rooms. After long opposition and prejudice the open-window habit has become very prevalent among all classes in England, and this, no doubt, accounts largely for the reduction of the tuberculosis figures in that country, in spite of the poor nutrition, poor clothing and excessive use of alcohol among the English poor, whose poverty is scarcely equaled in America.

Dr. H. P. Parker said that two points had been made in the paper which were of particular practical importance and which seemed to deserve the emphasis of repetition: the frequency with which tubercle bacilli cannot be demonstrated in the sputum until very late in the case; since, therefore, many cases must be diagnosed before the bacilli can be seen, great care and skill in the practice of physical examination are of much importance. A second point is that of telling the patient the truth as to his condition; experience has demonstrated that this is the only way to get the proper coöperation of the patient and to control the infection.

Dr. Woodward said that his views as to the susceptibility of colored persons to tuberculosis were contrary to those of the speakers who had preceded him. He still believes that negroes have a greater susceptibility to many diseases than do white persons of the same social scale and environment; this opinion is strengthened by the greater death rate of negro alley-dwellers over their white neighbors. He believes that the improvement in the statistics of the incidence of disease among negroes in the past thirty years may be in part due to their gradual adaptation to the climate and to civilized modes of living.

Dr. Randolph's paper had forcibly demonstrated that satisfactory results in the tuberculosis dispensary work depend largely upon the home visitor to inspect and encourage. Cabot has instituted a service of this sort in Boston, the workers being called "backbone givers." He agreed with Dr. Kober as to the importance of droplet infection in the dissemination of consumption; Dr. Woodward regarded it as more important and dangerous than dust infection. To control droplet infection in an apartment would require continuous disinfection, a fact which makes terminal disinfection the only practicable method of sanitary control of premises which have harbored consumptives. Frequent disinfection also would merely encourage patients to indulge in filthy habits, because "if the Health Department is going to disinfect my room next week, why not spit on the floor this week?" is a mental attitude difficult to overcome in the ignorant. As to the extent of disinfection, inasmuch as the advanced consumptive does not wander about the house but is confined rather straitly to one room, for practical purposes the disinfection of the sick room is sufficient.

Dr. Chappell said that Chapin, of Providence, does not believe

in terminal disinfection. If proper disposal and disinfection is made of infective materials during the course of an infectious disease, then terminal disinfection will not be necessary. As to the tuberculous subject, he goes about with considerable freedom, then he is confined to the house, and finally is confined to the room; if all this time his sputum is properly cared for, then there should be no need for disinfection after his removal or death. Dr. Chappell agreed with this view.

As to informing the patient of the nature of his malady he believed that this should be done; but the diagnosis should be made beyond peradventure of doubt before such information is imparted.

Dr. Randolph said in reply to Dr. Woodward that because alley negroes live side by side with whites does not prove that they live alike. White persons seldom have any idea of the gregarious qualities of the negro and of his peculiar social habits. Dr. Randolph had no intention of being dogmatic upon the subject, but he advanced the opinion that as the results of his own experience and observation there is no inherent predisposition to tuberculosis among negroes.

He had come to recognize the importance of the method used by Dr. Pratt in the conduct of his dispensary class: the use of the follow-up visiting to keep track of the patients and to keep them boosted up to the point of retaining past benefits.

As to disinfection, there are many opportunities for differences of opinion upon the relative merits of the several modes. In the District of Columbia disinfection is done as the law provides. But observation leads to the feeling that when the consumptive patient coughs all over the house for a period of two or three years there ought to be some way to keep that house clean all the time.

Dr. Randolph does not use tuberculin for diagnostic purposes. In his work he had come to believe that diagnosis rests upon the fundamental results of a carefully-taken clinical history and of an exhaustive physical examination. We do, of course, make errors at times, but it is best to treat doubtful cases as positive. Tuberculin methods of treatment are still in the experimental stage; he believed, however, that in the future tuberculin therapy will become universal.

He would give the following definitions:

1. An arrested case is one in which the signs of active disease are absent: no fever and no active physical signs.
2. Apparently cured, those cases with uninterrupted arrest for one year.
3. Cured, those cases uninterruptedly arrested for three years.

REVIEW IN SURGERY.*

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In looking over the surgical field for the year just gone there is much to give satisfaction, much to excite our admiration and much that holds promise of better things in the future.

A careful perusal of the literature would seem to show that while some very good work has been done and a number of very important things accomplished, the year as a whole has been, as it were, devoted to perfecting important methods already instituted and the working out of plans and suggestions for further advances in our art.

Anesthesia.—The number of men who are doing major operative work under local anesthesia is daily becoming greater as the field becomes more thoroughly understood and the possibilities of cocain, allopain, stovain, etc., realized. More recently a new form of producing anesthesia by their use has been advanced—that of injecting the anesthetizing substance into either an artery or a vein. Ransohoff, of Cincinnati, publishes a case preliminary to a series of experiments in local anesthesia. He injected a mild solution of cocain directly into the artery supplying the part to be anesthetized (the arm). After a lapse of two minutes anesthesia was complete, and an antebrachial amputation was done without the knowledge of the patient.

On the other hand, Bier reports 134 operations by intravenous injections, including 10 amputations, 37 resections of joints, 12 bone sutures and 7 extirpations of varices. The results were perfect in 115 cases and satisfactory in 14; only 5 out of the entire number experienced any pain. His method is to cut off the general circulation from the region to be operated upon, and the anesthetic is injected into a vein. In his own words, "it throws all other methods of local anesthesia into the shade."

Hitzrot, of New York, also advocates this method, and mentions amputation of the leg for tuberculosis, hallux valgus and tubercular teno-synovitis of the arm done by this method. He claims that novocain is the ideal drug for this method, and says "its superiority to infiltration anesthesia for the types to which

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it is adapted is most marked. It is simpler, more rapid and more complete, and will supplant the slower methods in many cases."

As regards spinal anesthesia, Orr claims that statistics are not complete enough to arrange this method where it belongs in surgery. In the meantime reports of sudden death from its use continue to filter in. The method is somewhat used in Germany for laparotomies, and is especially recommended by Sertoli.

Radiography.—Our good ally, the x-ray, has not been neglected, but has now reached such a state of perfection that shadow-graphs are obtained not only of the osseous system but of the internal organs as well, the heart, lung, liver, etc., being shown with remarkable clearness. No longer is a time exposure necessary, for not only have we operators in our own city who can take the most satisfactory pictures in the space of a second, but the Germans have been working in the field of shortening the exposures, and Dessauer has made a series of pictures of the extremities of the thorax, the left superior part of the lung and heart in the almost incredible time of less than a hundredth of a second. The advantage of the method is that it is no longer necessary to fix the patient carefully, the entire manipulations requiring no more trouble than the pushing of a button.

Spine.—A new method of treatment of high Pott's disease is advanced by Gallie, of Toronto, which consists in lengthening the short upper lever of the region by adding to it the cervical spine. The splint is extended up to and includes the forehead and occiput, leaving the arms, face, ears and part of the chest exposed. It has been tried out thoroughly for two years, with most gratifying results.

Genito-Urinary.—Discussion continues to wax warm over the perineal route *versus* the suprapubic in prostatectomy, without either side gaining much apparent ground. Rocket and Salimer have collected statistics for comparative estimation of the advantages of the high and low route. In 819 cases by the perineal route the mortality was 71—8.7 per cent.; in 748 cases by the transvesical route it was 10.9 per cent. They conclude, on the whole, that the perineal route seems to be less serious than the suprapubic, drainage is better and there is less shock.

Hagner's operation of epididymectomy for gonorrheal epididymitis is distinctly original and a decided step forward in the treatment of this affection. His report of cases and results is

convincing, and his work along this line a decided gain to genito-urinary surgery.

Prof. Thorkild Røvsing, of Copenhagen, reports 50 nephrectomies for malignant disease, of which 18 survived without recurrence; of these the longest time elapsed since operation is sixteen years, the shortest five years. These results are remarkable for the high percentage of survival, 16 per cent. for from five to sixteen years. He lays stress for these excellent results on his method of operation, the principle of which is to take away the kidney absolutely intact and closed, the first step of which is division of the ureter by the thermo-cautery between ligatures, when the kidney and its pelvis are freed, using great care to avoid any lesion of the organ. The end of the ureter is then fixed upon the outside of the skin by suture, and never by any chance allowed to sink back into the retro-peritoneal connective tissue, for fear of infection from urine containing cancerous matter.

Carcinoma of Bladder.—Partial cystectomy, as against total cystectomy with its fifty-five per cent. mortality, is gaining favor abroad for bladder carcinoma.

Kidneys in Eclampsia.—Alsberg, of Leipsic, reports four cases of threatening eclampsia averted by decapsulation of both kidneys. He mentions one patient in particular, a primipara with seven convulsions between delivery and operation, who was entirely free afterwards. He regards the operation as indicated when the convulsions are frequent and growing worse, the coma profound, pulse failing and anuria impending.

Rectal.—A new and bloodless method of amputating in prolapsus of the anus and rectum is reported by Dudley, of Manila. Two long mouse-toothed forceps are applied to the anterior wall of the prolapsed bowel in its long axis, one blade of which is in the rectum, and the other forceps is placed above from the folded margin up to within three mm. of the skin surface, including both cylinders of the bowel. These forceps are applied parallel, about one cm. apart. Both cylinders of the bowel (all the tissues grasped by the forceps) are divided between them up to within two mm. of the skin margin. A catgut suture is then placed just beyond the toe of the right pair of forceps. A pile clamp is applied beyond the toe of the pair of forceps to the left, and grasping the circumference of both folds of intestine, close to, but not including, the skin. The forceps are removed, and the

portion of bowel embraced in the clamp is cut away, and the remaining tissues are seared by an electric cautery. The tissue embraced between the blades of the clamp is now seared and sewed together by a lock stitch after removal of the clamp. The suture is continuous and embraces the entire circumference of the bowel. The operation can be completed in fifteen to twenty minutes.

Haynes (*Annal. Surg.*) recounts a similar operation, also new, which consists of ligating the base of the prolapsed bowel one-half inch from the anus by means of overlapping sutures. The distal portion of the prolapse is excised to within one-fourth inch of the ligature lines, and the cut edge whipped over with Pagenstecher thread. On withdrawing the rectal plug the suture line immediately retracts above the anus.

Pancreas.—Work on this organ seems to have been altogether with the Cammidge test. Krienitz has applied it in 250 cases, followed by operative intervention in 27. The findings of the test corresponded with the clinical course of the cases in 81 per cent. He places great reliance upon it.

Appendicitis.—There would seem to be nothing new developed in the treatment of this disease. It would appear to be more firmly established than ever that cases should be brought to operation as early as possible, and that every case of appendicitis is a surgical case from the start and should be operated upon as quickly as a diagnosis can be made.

Herniotomy in Children.—Deaver, after a large experience, concludes that if the hernia is small and truss can be kept in place, a year's trial is admissible. If no result is obtained after a year, operation should be done, regardless of age. He wrote to the parents of 100 children who had been operated upon, and received replies from 63; there was no mortality and no recurrence.

Surgery of the Intestines.—An almost incredible amount of work has been done in this branch; some new methods have been devised and improvements made in old. Probably the most signal improvement and the best actual step forward is the method devised by Drs. Parker and Kerr, of our own city, of anastomosis by means of specially-devised clamps and a basting stitch. The method has the great advantage of keeping the field absolutely free from contamination by bowel contents, as the gut is at no time open to the outside world. There is the further advantage

in time, as the procedure requires but a few minutes to complete. I might add that the method has passed the experimental stage, having been done successfully on the human subject.

Cardiac Surgery.—Direct massage of the heart in the face of apparent death has been definitely established. Not only have we among our own members one who has successfully done it—Dr. C. A. White—but 50 cases are now on record, of which, according to White's table, 24 were resuscitated, practically 50 per cent., with 10 recoveries, 20 per cent.

The heart is grasped through the diaphragm, the hand being inserted through an incision above the umbilicus. The ventricles are squeezed rhythmically between the fingers, or the heart is pushed against the chest wall. It must be kept up for a long time; sometimes fully fifteen minutes elapses before the heart responds to the treatment.

Cardiac suture continues to receive the attention it so justly merits. Over 158 cases are now recorded, with 59 recoveries. Certainly a most gratifying showing for an otherwise fatal condition.

Burnheim reports additional progress in his experiments to transform a mitral stenosis into an insufficiency with benefit to the patient. He has not been able as yet to reproduce the pre-systolic murmur or the usual symptoms characterizing the "button-hole" stenosis in man, hence the question of possible symptomatic benefit still remains unanswered.

Krueger reports two cases of removal of embolism from the pulmonary artery; one patient died a few hours following the operation, the other lived fifteen days.

Transplantation of Organs.—In this, probably the most striking and distinct advance is that made by one of our own members, Dr. Vaughan, whose successful attempt to transplant a knee-joint on the human subject stands unique in the field of surgery, so far as I am aware. Inasmuch as the case is still unpublished, and the only reports so far are those of the daily press, I have asked Dr. Vaughan to tell us something about it this evening.

Borst and Enderlin removed the carotid and thyroid glands and reimplanted them in the same dog; in six cases into another dog. In seven cases an artery and kidney were removed and reimplanted in the same animal, in six into another animal. Their experiments show that when implantation is done in the same animal

from which the organs are taken complete restoration to function can be expected.

Salzer has transplanted the cornea of a horse into the cornea of a rabbit.

E. A. Codman reports the successful substitution of a fibula for a tibia in the same leg; the operation being done by cutting the fibula at a higher level than the border of the upper fragment of the tibia, and implanting it into the spongy tissue of the upper fragment. Three years afterward an x-ray showed astonishing hypertrophy of the transposed bone, and the boy had a useful limb instead of a stump resulting from an otherwise necessary amputation.

Noesske has succeeded in restoring function after complete loss of the right thumb by forming a new thumb over a bayonet-shaped piece of bone taken from the tibia. The patient was a boy aged thirteen, and the new thumb has been in use for nine months and shows no sign of shrivelling or absorption. The thumb was made from a pedunculated skin flap taken from the chest, the pedicle cut after three weeks, and the tip of the thumb was then modeled and sutured.

After this had all healed it was incised and a piece of bone from the tibia introduced. It grew to the first metacarpal bone in three to four weeks, and there is now merely a linear scar. The boy can use his new thumb to good effect, writing well with it; sensation is nearly normal. Noesske intends transplanting a nail from a toe to complete his work. He reports a number of similar plastic operations on the hand.

Hohmann recites 26 illustrations from the experiences at Lange's clinic at Munich in tendon transplanting. As is well known, one of the greatest impediments to good functional results is the tendency to adhesions after the transplantation. This is overcome by making a canal for the transplanted muscles through the subcutaneous adipose tissue instead of below it. The results are encouraging and promise important progress in this line.

Thorax.—Brat and Schmieden, in Bier's clinics, have perfected an apparatus which is said to combine the advantages of the methods for positive and negative intrapulmonary pressure with a device for artificial respiration and insufflation of oxygen, and also an arrangement which permits anesthetization, all with the same apparatus.

A. E. Rockey, of Portland, Oregon, has inflated the collapsed lung after removal of sarcoma of the thoracic wall and diaphragm. The procedure was eminently successful, requiring hardly a minute, after which respiration was perfectly normal, with no physical signs of pneumothorax. He points out the value of this method in the absence of more complicated apparatus.

Teske has found that if water is allowed to flow into the thorax when it is opened the lung floats on the water and does not collapse. This he discovered on cutting a large flap in the chest wall. He then experimented on rabbits, and found that respiration proceeded with regularity and normal time, the exposed lung keeping time with the intact lung.

P. L. Freidrich, of Marburg, Germany, does a total thoracoplastic pleuropneumolysis for pulmonary tuberculosis. He resects the ribs of the entire chest wall on the affected side, allowing the chest wall to collapse and permanently immobilize the lung. He also detaches the apex, with its pleura, thus allowing even greater shrinkage of lung substance. He claims for the method that not only does the process cease in the affected lung, but that foci in the opposite lung in a primary stage are thereby favorably affected. He reports eight complete operations on favorable cases, six on unfavorable. Of the eight, he gives results in six as either "good," "best" or "recovery." Of the other six, four died within a few days, one showed no improvement and one was worse than before operation. He points out that cases must be strictly selected, and only those operated upon who have unilateral cavernous lesions with, at most, passive foci on the opposite side, and must be free from evident recent tubercular processes in other regions, more especially of the bowels.

Freeman, of Denver, Colorado, working on the same principle, operates on apical tuberculosis by resecting two to three ribs near the apex and applying a specially constructed truss to produce pressure and consequent collapse of that portion of the lung. He reports two cases with good results.

The Parathyroid Question.—Much light has been thrown upon this subject by the Mayos, who report 1,200 operations for goiter without tetany. Their invariable principle is to conserve these glands, and if by accident one is removed during operation it is immediately transplanted.

Dr. Vaughan said that Dr. Hasbrouck had referred to an operation performed by himself which had been the subject of much newspaper notoriety. He had very often been almost too full for utterance, but was not yet ready to make a report of the case; the only statement for which he was responsible was a preliminary report of about ten lines in the *Journal of the A. M. A.*, which had been sent in response to an inquiry by the editor of that journal. The operation was the transplantation of an entire knee joint, bones and tendons, from a recent cadaver to the leg of a patient whose knee had been resected for tuberculous disease. Bony union took place, but, unfortunately, there was suppuration and the tendons sloughed out. The best he now hopes for is ankylosis, which is better than a resection with the consequent shortening. But suppuration still continues, and though the patient is improved the ultimate result is still uncertain. When a definite report can be made he expects to make it to this Society and to show the patient.

Dr. Staples said that he had enjoyed Dr. Hasbrouck's paper and had appreciated the opportunity to hear the details of Dr. Vaughan's transplantation case. He had seen the x-ray plates of this patient's leg and could endorse Dr. Vaughan's statement that bony union had taken place.

With regard to Dr. Hasbrouck's reference to instantaneous x-ray photography, Dr. Staples said that much has been accomplished in the way of shortening exposures in radiography, and in some instances instantaneous pictures may be made; efforts in this direction are laudable for many reasons, among others, to avoid the possibility of burns. But the best results will still be accomplished by somewhat slower methods, as the detail in pictures made by the instantaneous method is not well defined.

Dr. Hagner said that Dr. Hasbrouck's review had been interesting and thorough. The debate upon the relative merits of the suprapubic and perineal routes for prostatectomy is likely to continue, because the choice really depends upon the actual conditions present in each case, and upon the ability and dexterity of the individual operator.

A surgical innovation not mentioned by Dr. Hasbrouck is the method of extirpation of the kidney for malignant disease advocated by Walker, of Baltimore. The operation consists of tying the vessels and ureter of the affected kidney by the abdominal route, closing the abdomen and then removing the kidney through a lumbar incision. The object of this technic is to avoid the manipulation of the kidney necessary in tying it off through the lumbar incision, which manipulation increases the chances of metastasis. Recurrence after nephrectomy for cancer depends much upon the time of operation; if the disease has extended beyond the capsule of the kidney, metastasis is practically unavoidable.

In cancer of the bladder the question whether the whole bladder shall be removed or only the involved portion is a difficult one. Complete extirpation offers the best hope of cure, but death from shock is alarmingly frequent. After extirpation of the bladder, ascending infection of the kidney is very likely to occur when the ureters are implanted in the vagina or rectum. This difficulty has been solved in part by fixing the ureteral extremities in a lumbar wound and receiving the drainage into a specially devised box; experience has demonstrated that kidneys may be drained for indefinite periods upon the surface of the body with little danger of ascending infection.

An advance in radiography not mentioned in the review is in the possibility of studying the pelvis of the kidney. By filling the renal pelvis with solution of collargol or protargol through a ureteral catheter, satisfactory x-ray pictures may be made clearly defining the shape and size of the pelvic cavity.

An operation not mentioned is Martin's anastomosis of the globus major and minor for the cure of acquired sterility, as after bilateral epididymitis. He himself has performed this operation in six cases, with three successes.

Dr. H. H. Kerr said that the experimental work upon the method of intestinal anastomosis to which Dr. Hasbrouck has referred is still going on, but had been seriously hampered by the difficulty of getting dogs for experimental purposes, a difficulty growing out of some recent legislation. Dr. Kerr had been encouraged in the work by the successful application of the method in man in a case of gunshot wound of the intestine. Halsted, of Johns Hopkins, likes the method and had recently had Dr. Kerr and his associate demonstrate it before the class in Baltimore.

Dr. Hasbrouck thanked the speakers for their remarks, but did not wish to add anything to the discussion.

ADENOIDS.—Dr. Maxwell, Superintendent of Schools, New York City, says, according to the *New York Evening Mail* (*Buffalo Med. Jour.*, Dec., 1908), that adenoids cause depravity in children who have them. The children are almost certain to develop criminal tendencies. They are the ones who make the noise in the class-room, defy the teachers and are generally incorrigible. After removal of adenoids the behavior of the children is markedly improved as also their intelligence. He thinks that the Board of Education should have the power to compel the parents to have adenoids removed.

REVIEW OF ORTHOPÆDIC SURGERY.*

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A review of the recent progress in Orthopædic Surgery is no easy task. The field is broad, involving, as it does, the consideration of the deformities of the framework of the human body, the diseases and lesions of the bones and joints, and the peculiarities and defects of the muscular system. In this field there has been an immense amount of good new work done in the past few years, much of it along operative lines, a great part of already definitely established value, while some is still in the purely experimental stage or has been used too little to permit of definite conclusions.

From this material I have endeavored to select as subjects for presentation tonight those which seemed to me of greatest interest to the general practitioner and to those workers in special lines whose fields occasionally border upon or overlap that of the orthopædic surgeon. Most of these articles have been published within the past two years, but the importance of the earlier introductory work makes it necessary to go farther back in some instances.

The grouping is under the following heads:

1. Tuberculosis of the Bones and Joints; 2. Non-Tuberculous Diseases of the Joints; 3. Non-Tuberculous Diseases of the Bones; 4. Traumatic Lesions; 5. Congenital Deformities; 6. Static Deformities, and 7. Paralytic Deformities; which I shall now proceed to take up in the above order.

I.—TUBERCULOSIS OF BONES AND JOINTS.

Ely¹, of New York, in a report on a series of excised joints sent from the operating rooms of one of the large New York hospitals with a diagnosis of tuberculosis, lays stress on the fact that in about 20 per cent. no trace of tuberculosis could be found in examination in the pathological laboratory. He concludes that a more careful examination should be made before performing such a radical operation as joint excision, and that in view of the difficulty of diagnosis, even at operation, statistics of cases cured

* Read before the Medical Society, November 10, 1909.

by conservative means should not be depended on if based on unsupported clinical evidence.

Although many cases were primarily osseous in character, yet a certain number were evidently synovial, contrary to the generally accepted view since the report by Nichols, of Boston, in 1896. In all cases he finds the cartilage acting as a barrier to the progress of the disease until undermined and separated from its source of nourishment. The cases all show the futility of curettement or bone scraping, a means of treatment which is now, fortunately, generally discarded. His findings show that nature attempts to cure the disease by synostosis and destruction of the joint, which should be the aim of all radical operations; although care should be taken not to give too wide a margin in these excisions, since complete extirpation of the disease is not necessary if an ankylosis is obtained.

The treatment of bone and joint tuberculosis is steadily swinging toward conservation. Ludloff², of Breslau, at the International Medical Congress at Budapest this summer, discussing treatment from the operative point of view, advises joint resection only in tuberculosis of the knee and foot, when it should be undertaken early. In elbow and wrist tuberculosis he considers fixation and passive hyperemia the treatment of choice, while operative treatment in tuberculosis of the hip and vertebrae is permissible only in rare instances. Joint excision in growing children is never to be considered.

Lange³, of Munich, believes that fixation should be combined with freedom from weight bearing until the acute stage has passed, pain has been long absent, and radiograms show a normal amount of lime salts in bone about the joint. Thereafter fixation alone should be employed, the duration varying from six months in mild cases treated thoroughly and without marked bone destruction, to from two to five years in the severe types.

Klapp⁴, of Berlin, agrees with this and emphasizes the value of 10 per cent. iodoform-glycerin injections into cavities, based on the work of Jochmann and Mueller, who found that the production of leucocytic ferment is thus increased and the tuberculous pus, therefore, more rapidly absorbed. The passive hyperemia of Bier is also of great value, especially in involvement of the upper extremity, care being taken to keep the peripheral parts warm and to avoid hyperesthesia or pain. Klapp applies

the bandage for from one to three hours daily, but in this class of infection Bier himself advocates it for the greater part of the twenty-four hours.

So much emphasis has been laid upon the outdoor treatment of surgical tuberculosis in recent years that it will be only mentioned here. In fact, fresh air the entire twenty-four hours and nourishing food are of equal importance with local treatment, and without them the best results are impossible. The results at such seaside hospitals as Hagevik, Norway, one of the oldest; Berck-Sur-Mer, in France, and Sea Breeze, near New York (from the last of which the results of the first three years were reported some months ago by Ely⁵, the attending surgeon), are brilliant; but although in some respects seaside conditions seem the best, excellent results have followed treatment in such country convalescent homes as that of the Boston Children's Hospital. Without doubt, the general adoption of establishments apart from those for phthisis, for children suffering from surgical tuberculosis, where convalescent treatment can be carried out for the several years usually necessary after the patients have been discharged from the city hospitals, is of the greatest importance, and is a matter which I feel should receive serious consideration here in Washington.

In the treatment of tuberculosis of the hip, fixation by a short plaster spica of the Lorenz type, with crutches or other methods of avoiding weight-bearing in debilitated patients and in the acute stages of the disease, is generally used, and is urged by Wilson⁶ in a recent paper as: 1. Promoting outdoor life; 2. Providing the necessary fixation, which is the essential feature of treatment, since grinding of the joint surfaces alone is harmful, not simple weight-bearing; and 3. Giving good final results, shortening the duration of the disease, and preventing deformity. Normal function is the end to be sought, but a good result is ankylosis in 20 degrees of flexion, 20 of abduction and 5 of external rotation. Bradford and Soutter⁷, of Boston, however, still strongly advocate the brace used in the Children's Hospital, which they claim to be simple and inexpensive, to provide good fixation, and especially to furnish traction, which they regard of the utmost importance. They point to the excellent results in over 1,800 cases treated as proof of their contention. Codivilla⁸, of Bologna, also advocates traction in bed or combined with a plaster spica in the acute stage.

Ely⁹, in reporting on treatment of Pott's disease at Sea Breeze, emphasizes the three chief features of treatment: 1. Exercise; 2. Nourishing food and fresh air, rather than sunshine; and 3. Proper fixation of diseased area. Under the last head recumbency in hyperextension on a Whitman-Bradford frame the entire twenty-four hours is used in children under three years of age and in those with deep abscesses, psoas contraction and complicating hip disease. In other cases the plaster-of-paris jacket is used exclusively. If the focus is below the ninth thoracic vertebra and uncomplicated by paraplegia a simple type is employed; if above, a jacket applied by Calot's method. This method, introduced into this country some two or three years ago, consists of a plaster jacket applied in head suspension, including the entire body, shoulders, neck and, in high-seated types, chin and occiput. The technique of application is rather difficult, requiring preferably three assistants. After application the portion which covers the front of chest and upper abdomen is removed, as is the portion over the *kyphos*, and pressure over this point, by means of a pad changed at intervals of from one to two months, gradually overcomes the deformity in most cases.

Since abscesses, if infected, lead in the vast majority of cases to early death, the greatest care is taken in their treatment. They are evacuated by means of a trocar and vacuum bottle, never incised and far less drained, and after removal, 10 cm. of a fresh olive oil-ether mixture (olive oil 50 parts, ether 50, creosote 2, iodoform 5) is injected and this process repeated every ten days until the cavity ceases to refill. In discharging sinuses Beck's bismuth injections have been used, but no conclusions reached as yet.

Lovett¹⁰, of Boston, advocates similar treatment, reporting very satisfactory results from use of the Calot jacket in the Children's Hospital, and urges recumbency throughout the acute stage.

The filling of tuberculous sinuses with bismuth paste to hasten healing was introduced by E. J. Beck^{11, 12, 13, 14}, of Chicago, in 1908, in a series of papers. He advocates it for three purposes:

First. For diagnosis of sinuses; radiograms of the sinuses previously filled with the mixture show their character and course. Second. For therapeutic purposes in old sinuses, when injections are repeated at intervals until the discharge ceases. Third. For prevention of sinuses by injection into tuberculous cavities the

contents of which have been previously drained off, in which case a solution containing ten parts of bismuth is used instead of the usual mixture. This consists of 30 parts of bismuth subnitrate and 60 of vaseline, mixed while boiling, to which he sometimes in later stages of treatment adds 5 parts each of white wax and soft paraffin. This liquid, while still hot, is quickly injected under moderate pressure into the sinus up to a maximum 100 grams, and a compress applied to prevent expulsion before hardening. He uses bismuth subnitrate because of its bactericidal and practically non-toxic qualities and its slow absorption, and reports closing of obstinate sinuses in a large majority of cases, about 70 per cent. of cases of all kinds yielding to the treatment.

Numerous reports on the use of this method have been made by various observers, their results ranging from practically *nil* to 60 per cent. of cases as reported by Baer¹⁵. A number of cases of poisoning have occurred, some terminating fatally, which in many instances have been considered due to freeing a form of nitric acid, and Stern¹⁶ consequently recommends the substitution of bismuth subcarbonate.

Ridlon and Blanchard¹⁷, reporting in June last a second series of 100 cases of sinus and abscess injections, report 29 cured and 29 improved but still under treatment. In view of the recognized danger of poisoning, and since they believe that bismuth itself has no curative properties, they have substituted a mixture of white wax 1 part, and vaseline 8 parts, to which is added $\frac{1}{2}$ per cent. of powdered iodine in badly infected cases. Of 17 cases treated by injection of this wax-vaseline paste they report eight cases healed in from two to eight weeks, and nine cases improved but still under treatment. In radiographic examinations for purpose of diagnosis, subcarbonate of iron one, and vaseline two parts is employed.

II.—NON-TUBERCULOUS DISEASES OF JOINTS.

The non-tuberculous joint diseases comprise a large group of varied etiology. In 1904, Goldthwait^{18, 19}, of Boston, divided them into three general heads—the infectious, atrophic and hypertrophic forms of arthritis, and also published a paper on the subject of the infectious type. The acuteness of the case and the severity of the lesion depend upon the variety of the organ-

ism, its virulence and the resistance of the patient. In a large group of cases the micro-organism causing the disease is known ; the staphylococcus, streptococcus, pneumococcus, gonococcus and the bacillus typhosus being most frequently met with. Of these the B. typhosus and the gonococcus usually give very clear-cut clinical pictures, while the others are often less definite and require a microscopic examination to determine their nature.

A large group of cases still more chronic in their character but bearing all the characteristics of an infectious process, is probably caused by micro-organisms whose nature has not yet been worked out ; and in this direction Goldthwait²⁰ has done much valuable work, the present status of which is well brought out in a recent paper. In this he lays marked emphasis on the fact that in most of these cases the joint is not the seat of the primary infection but that it is affected only secondarily, and that often only the toxins of the organism concerned, rather than the organism itself, are in the joint. Hence treatment of the joint is of little avail, if the source of the infection is not found and combatted. This primary lesion may be of an insignificant nature, such as a simple cold, tonsilitis, carious or ulcerated teeth, or some intestinal disturbance, and in the obscure cases a careful examination of the nose and throat and their accessory sinuses, and the teeth, the gastro-intestinal and the genito-urinary tracts should be made by a competent specialist in those lines. The most important sources which have been found thus far are chronic tonsillar crypts distended with pus and detritus and auto-intoxication from the gastro-intestinal tract. Painter²¹, in considering the place of operative surgery in these groups of cases, states that its aim is, first, the ridding of the articulation of the products of inflammation ; second, removing of hypertrophied villi which interfere with the joint function and tend to produce erosion, and, third, the correction of deformity. The first two are accomplished by aspiration or arthrotomy, the third by *brisement forcè*, or more rarely by osteotomy and excision. He finds operative and manipulative procedures to be indicated in the infectious and atrophic forms, but contraindicated in the hypertrophic, where fixation offers the best treatment if the aim is to recover joint function.

In those cases of hypertrophic arthritis affecting the hip when, due to the spur formation, the motion of the joint is so interfered

with mechanically as to cause great pain and disability and to offer no hope of restoration of function, several operative procedures have been advised. That recommended by Jones²², of Liverpool, in complete ankylosis, consists of the formation of a pseudarthrosis by first removing the femoral neck and then separating the great trochanter with its muscular attachments from the shaft and attaching it to the head. This allows the upper end of the shaft to come against the outer side of this transferred trochanter, where it is kept in position by the muscles and ligaments. Good function has resulted in some of these cases.

Albee^{23, 24}, of New York, attempts to gain complete ankylosis in the most advantageous position, viz : that of moderate abduction, by freeing the femoral head from the acetabular margin, removing its upper third in a horizontal plane, cutting a flat shelf in the upper margin in the acetabulum, and fitting these two flat surfaces together so that, with the hip abducted, perfect apposition is obtained, and consequently rapid bony union. This is facilitated by the removal of as much cartilage as possible from the remaining joint surfaces. In 1908 he reported several satisfactory cases, and at the recent International Medical Congress reported a continuation of these excellent results in all his cases, which at that time numbered over a dozen. Others have tried the same method with good results.

In acute infectious arthritis Murphy, at the same Congress, laid stress upon the fact that the destruction of the joint is in most cases due to the pressure of the contained fluid rather than to action of the infectious organism itself. He therefore advocated in a large majority of the cases, instead of routine incision and drainage, the treatment which has long been used in tuberculous abscesses, namely, aspiration of the fluid and injection of a mild counter-irritant to increase tissue resistance. This procedure is to be repeated frequently enough to prevent tension of the joint surface until the condition subsides.

In the treatment of those chronic infections and other conditions of the joints which have resulted in ankylosis, numerous attempts have been made to restore joint function. The most satisfactory of these is that advocated by Murphy²⁵ in 1905 as applicable principally to the knee, hip and elbow joints. It consists in separating the two bones which originally formed the joint, restoring the original shape of this as far as possible and

inserting a flap of muscle or fascia between the bony surface structures to keep them apart until sufficient time has elapsed to permit building a substitute for the old synovial structures. He has reported excellent results.

Various substitutes have been suggested for these tissue flaps, which are sometimes difficult to obtain and properly insert. Baer²⁶, of Baltimore, in a paper read before the American Orthopedic Association in June last, reports excellent results following the use of a properly prepared chromicized pig's bladder, which withstands the pressure of the adjacent bony surfaces for about forty days during which passive motion has been allowed to proceed so far as to prevent the danger of re-ankylosis. He has applied it especially in cases of knee and hip-joint ankylosis.

III.—NON-TUBERCULOUS DISEASES OF BONES. OSTEOMYELITIS.

From the study of a series of cases of osteomyelitis occurring in little children, Thorndike²⁷, of Boston, concludes that the disease may not only attack previously healthy bone but be engrafted upon a pre-existing tuberculosis as a result of septic infection of a tuberculous abscess following drainage and leaving of sinuses. It may attack either shaft or epiphysis, and is a complication to be met by prompt surgical treatment, irrespective of the tuberculous process. The treatment, as summarized according to Nichols, consists (1) in acute stages, before necrosis has occurred, of the removal of a large area of cortical bone and drilling numerous holes in the cancellated structure to facilitate drainage; in the (2) sub-acute stage, removal of discrete sequestra. In this type, the plugging of the cavities which have been cleaned out at operation with preparations advocated by Moorhof, Mosetig, Watson²⁸, Murphy²⁹, and others, gives most satisfactory results. That used by Murphy consists of 2 parts formalin, 30 parts glycerin, 20 parts gelatin and 48 parts water, and when poured in hot fills every cavity, readily consolidates and is aseptic, antiseptic and absorbable. He emphasizes the importance of firm uniform pressure on the granulating surface, which stops secretion, favors connective-tissue formation and hastens the filling process.

In cases where necrosis of the entire shaft has occurred, free

incision and drainage are carried out, followed two months later by the removal of the sequestrum unless a single long bone, as the femur, is attacked, when, to avoid shortening, the removal should be delayed until an involucrum has formed. The operation consists of a subperiosteal resection, leaving only a thin shell of involucrum, and in five to six weeks a shadow of bone deposit is first seen in radiogram. After six months firm bone is usually present.

In those cases where regeneration has failed to take place a neighboring weaker bone has been made use of and transplanted into the affected bone, as in cases reported by Huntington³⁰, Stone³¹ and Codman³², where the fibula was used to replace the tibia. Numerous reports have been made of successful transplantation of portions of bone from other parts of the body to serve as a basis for reconstruction in these cases. Most prominent among these have been the reports of Lexer^{33, 34, 35}, who makes use of living bones from cases which have required amputation. He has had no failures in transplanting fresh bone covered with periosteum, and no suppuration or fistula formation, which he attributes to his careful removal of the medulla and substitution of the iodoform plug. Very encouraging have been his reported results in transplantation of whole joints, as in two cases where an entire knee joint, with its ligaments, was transplanted, with healing after four and seven months and some function, which was slowly improving at the time of the report.

In opposition to the generally-accepted theory of bone regeneration from periosteum, Macewen holds that the bone-forming elements are associated with the cortical bone rather than with the periosteum, and that the presence of periosteum is not necessary in transplantation; in fact, that if the periosteum is scraped clean of the adhering minute bone fragments no regeneration will occur. This view he emphasized with reports of cases in a communication to the recent International Medical Congress.

IV.—TRAUMATIC LESIONS.

A—Sacro-Iliac Relaxation.—In 1905 Goldthwait and Osgood³⁶ described in a very complete paper the occurrence of relaxed or displaced sacro-iliac joints occurring outside of pregnancy and parturition. The subject was considered further by Goldthwait³⁷

in a paper in 1907, while other observers have from time to time emphasized various points made in the original paper, without adding much that is new.

In a paper published in 1909 Fitch³⁸, of Rochester, in describing the condition which he has found present in varying degree in 5 per cent. of the last 500 of his private cases, concludes that strains of the sacro-iliac joints are common and are the most frequent cause of sciatic pain and pain in the lower back.

Tenderness over the sacro-iliac joint, increased by flexion of thigh with knee extended, is the most important diagnostic point. When the normal curve of the lumbar spine has been altered it must be restored and the pelvis must be supported by pressure applied at least as low down as the great trochanters. Pressure over and fixation of the pelvis are the chief features of treatment, and are obtained in varying degree by means of plaster casts, corsets, belts or a strapping, and the ultimate prognosis is good.

B—Sub-acromial Bursitis.—In 1906 Codman^{39, 40}, of Boston, published a paper on "Stiff and Painful Shoulders," in which he describes a class of cases, passing under such names as brachial neuritis, periarthrits, muscular rheumatism, fibrous ankylosis and contusion of shoulder, the causes of which he attributes to an inflammation of the sub-deltoid or, better, sub-acromial bursa, and subsequent adhesions, the whole usually of traumatic origin.

In a second paper on the same subject, appearing in 1908, he lays especial stress upon the great prevalence of the condition. The symptoms are numerous, but most constant are localized tenderness over the tip of the shoulder, the locking of the arm and shoulder by muscle spasm on attempted abduction and external rotation, pain over the shoulders and down the arm, which is especially severe at night, and in certain cases the occurrence of pain only at the point where in abduction of the arm the bursa disappears beneath the acromion. He claims that the sub-acromial bursa and the supraspinatus muscle are essential in abducting the arm, and that lesions of this bursa and tendon are the common cause of stiff and painful shoulders, many of the cases passing under other names.

The final prognosis is good, and when the pain or disability is great, relief may be obtained by a simple operation. In the simple cases exercises and massage are sufficient, but in the more severe types rupture of adhesions under an anesthetic may be

necessary, while in others open operation and direct division of the fibrous adhesions or excision of the sub-deltoid portion of the bursa is advocated.

Painter⁴¹, of Boston, in an article following Codman's first paper, advocates open incision and excision of involved bursa in all cases which have persisted over six months, because of the more rapid recovery from this than from manipulative measures, and Baer⁴² also recommends it in obstinate cases, not believing the bursa to be indispensable in abduction and rotation. Numerous cases were found in which there was a partial avulsion of the bony attachment of the supra-spinatus, and in many cases, on operation, calcareous deposits in necrotic material were found which explained a shadow observed in radiograms previously taken. This has been recently emphasized in a paper by Bergemann and Stieda⁴³, of Koenigsberg, who found that these deposits consisted of calcium carbonate and calcium phosphate within an area of necrotic or scar tissue in the cavity or in the bursa wall. They found trauma to be the chief cause, and recommended excision as better and quicker than manipulation measures.

From a careful study of the anatomy of the shoulder joint Goldthwait⁴⁴ concludes that the anatomical and pathological peculiarities of the acromial and coracoid processes, which normally lie in close apposition to the greater and lesser tuberosities of the humerus, respectively, and are protected from direct impingement upon these tuberosities by their bursae alone, are of great importance in several dissimilar conditions.

When the shoulder droops forward impingement takes place at a lower point and is more severe and more constant, the capsule becomes relaxed, and inflammation of the bursa and instability of the shoulder joint often result without any outside violence intervening. This condition of droop-shoulder was found to exist in all his cases of recurrent shoulder dislocation, whether other complicating causes were present or not, and simple correction of the position with holding of the shoulders erect and the scapulae flat against the posterior ribs was often sufficient to prevent recurrence.

In simple cases of inflammation of the sub-acromial or sub-coracoid bursae this correction is enough to control the condition and to lead to rapid recovery, but when adhesions have formed

previous manipulation to break them up and permit the obtaining of the proper position is necessary.

Where such conditions have gone on to obliteration of the bursa, not only is rotation impossible but, as in attempting it the humerus works constantly over the coracoid as a fulcrum, the capsule is gradually distended and dislocation becomes easy.

In many cases of obstinate so-called brachial neuritis and writer's cramp the condition has been found to be due to this malposition, with consequent pressure of the humeral head against the ribs and the catching of the ulnar nerve and other branches of the brachial plexus between, and is also relieved by correction of the deformity. He believes that many operations performed for relief of these conditions will fail if this important factor is not recognized, and that if it is recognized many such operations will be unnecessary.

V.—CONGENITAL DISLOCATIONS.

Congenital Dislocation of the Hip.—There is abundant recent literature relating to the treatment of congenital dislocation of the hip. Much of this deals with the treatment of cases formerly considered too old for the use of the Lorenz manipulative reduction, the method which, with some modifications and improvements, is now in general use. The most serious accident associated with the procedure, which is also observed chiefly among the older cases, is that of paralysis of the sciatic nerve or some of its branches, which Bade reported in the last meeting of the German Orthopedic Society to have been observed in 4 per cent. of 2,400 cases. A collection of the cases operated upon by the bloodless method by Lorenz himself, tabulated by his assistant, Reiner, shows good results in 40 per cent.

The best statistics are those reported by Bradford⁴⁵ of cases operated on by modifications of this method in the Children's Hospital in Boston, where the correction is usually made by means of a machine instead of manually.

Here the percentage of anatomical and functional cures has risen, until from 41 per cent. of cures between 1903 and 1906, it had reached, from 1906 to 1908, 90 per cent. of cures in single and 80 per cent. in double dislocations. The chief modifications are the putting of the leg in abduction with the patella pointing

forward instead of upward (Mueller's method), and the decrease in the time of fixation, now averaging three months. There have been no deaths, two fractures of the femur and no paralysis in the series.

VI.—STATIC DEFORMITIES.

Flat-foot.—Osgood^{46, 47}, in two papers published in 1906 and 1908, emphasizes the importance of considering the use of rigid supports only as a temporary measure in the treatment of weakened, relaxed arches of the feet, while the return to normal function without apparatus should be the result sought. The relief of symptoms is usually so easy that the importance of the after treatment is often overlooked.

Apparatus should be corrective rather than retentive, and should be light and springy. Attention should be given to proper shoeing, and the use of a modified Thomas heel is of great value. Massage and exercise are very important in bringing back to normal function weakened groups of muscles, especially the adductors, which are considerably weaker than the abductors in acute flat-foot cases, instead of almost the same strength as in the normal. In some of the severe rigid cases excision of the scaphoid has been found necessary to permit of sufficient correction; Legg⁴⁸, of Boston, reporting a series of such cases with relief from pain in every instance and correction of deformity in most, although flexibility could not be regained.

Scoliosis.—A most valuable series of papers on the cause of juvenile habitual or idiopathic lateral curvature is that of Boehm^{49, 50, 51}, of Berlin, extending over the past three years. In a careful study of forty-one anatomical cases which showed certain pathological forms of numerical variations, that is, unequal division in the two sides of cervical, dorsal, lumbar or sacral vertebrae, he found a lateral deformity of the spine based on this variation in a large majority. Radiograms of the entire column in clinical cases demonstrated that corresponding clinical types of habitual lateral curvature in a great majority of cases (16 out of 20) showed the variation expected at the seat of the primary curve. He concludes that a developmental error of the human body in embryonic life, having its morphological expression in the so-called numerical variation of the spine, is the fundamental cause of those idiopathic lateral deformities of the spine which

manifest themselves in the first half of the second decade of life. They have hitherto been incorrectly considered acquired affections of post-natal life, due to purely functional conditions. A more proper term would be *scoliosis congenitalis tarda*. Gottstein⁵² and others report similar findings and conclusions.

VII.—PARALYTIC DEFORMITIES.

Among the paralytic deformities those of anterior polio-myelitis have, of late, been attracting the most attention, probably due largely to the occurrence of an increasing number of apparently true epidemics reported from various parts of this country and abroad in the last few years, especially in New York in 1907, where over 2,000 cases occurred, which is described by Starr⁵², with a summary of 44 other epidemics. State boards of health are giving more attention to the matter, and that of Massachusetts is most noteworthy, having recently published the result of an investigation of an epidemic occurring in the west portion of that State in 1907. The etiology is still obscure, although it is probably an infectious non- or slightly contagious disease, the toxins gaining entrance to the body through the intestinal tract, and destroying the motor cells of the anterior horns of the cord, with the resulting paralysis of one or more groups of muscles. Three-fourths of the cases occur in the first three years of life; but even adults may fall victims. In two-fifths of the cases one leg is involved; in one-fifth both legs; while the involvement of the arms and trunk is much less frequent.

The symptoms are a feverish onset, usually with gastro-intestinal disturbances and usually immediate loss of muscular power of one or more groups of muscles, accompanied by wasting, coldness and blueness of the parts involved, loss of tendon reflexes and reaction of degeneration in the muscles. There is often pain in the acute stage. The treatment of this acute stage is very unsatisfactory, as the damage is usually done before the diagnosis can be made, and all that we can try to do is to repair this damage as much as possible.

The most important papers on the subject in the past two years have been a series of articles by Lovett^{53, 54, 55, 56}, of Boston, the last reported before the International Medical Congress at Budapest, in which he laid great stress on the operation of tendon

transplantation; and the series of articles by Jones^{53, 59, 60}, of Liverpool, who at the same Congress reported his results in the operation of arthrodesis, based on a series of 500 personal cases.

Three stages in the progress of the paralysis and resulting deformities can be distinguished in relation to treatment:

First. The stage of onset, in which the treatment thus far from an orthopedic point of view is *nil*; Second. That of early convalescence, namely, the first two or three months following the onset, when the gradual recovery must be aided to the greatest possible extent. To this end especial attention must be given to avoid deformities due to stretching of the parts, especially foot-drop, and the prevention of over-activity of the uninvolved muscles, and promoting all possible recovery of the injured muscles by improvement in their nutrition. For this purpose splints should be used from the beginning to avoid toe-drop, and massage and electricity should be begun as soon as tenderness has disappeared; Third. The stage of established paralysis as it is found months or years after the onset. In this stage there are two conditions to be considered, the contraction deformity and the loss of muscular power.

Of the first, the most common cause is the shortening of the non-paralyzed muscles which are no longer antagonized by their paralyzed opponents, especially in the case of the ankle and knee. The flexors are usually less affected than the extensors, and, consequently, we have mostly flexion deformities. In completely-paralyzed limbs the deformity can result from vicious positions alone. These deformities can be overcome in mild cases by corrective plaster; in the severe types, by tenotomy, fasciotomy and myotomy, supplemented by corrective plasters and followed by systematic massage and muscle training.

The treatment of the second condition, loss of muscular power, should be carried out only after the first has been overcome. Mechanical support, using apparatus to make function possible and to prevent recurrence of the deformity, is, in many cases, the only treatment possible; but this must be carefully fitted and is quickly worn out and outgrown, so that it is a severe burden on the patient. With a suitable brace many paralyzed muscles recover their functions, and in all but a very few the patient is enabled to walk.

The operative treatment is divided into several heads, according to the extent of the paralysis.

In those cases where one or more muscles are present which are unnecessary or which are actually harmful, their tendons can be transplanted into the insertions of a paralyzed muscle to replace or supplement it. An observance of several important points has made this operation of great benefit in a majority of suitable cases so treated, and these should be carefully borne in mind.

(a) The treatment should be according to a definite plan elaborated beforehand. (b) All deformity should be previously corrected. (c) Only muscles should be used which show by voluntary use that they will be vigorous enough to do the new work assigned to them, and electric examination alone is, therefore, of little value. (d) The strictest asepsis must be observed throughout. (e) In attaching the muscles, they must be made to pull in as nearly a straight line as possible. (f) The transferred tendons should be inserted into the periosteum rather than into the tendon of the paralyzed muscle. (g) The muscles should be attached on the stretch. (h) The joint should be maintained during and after the operation in over-correction. (i) Stretched muscles should be shortened and contracted muscles lengthened, as necessary. (j) Tendons should be lengthened, when necessary, by the substitution of stout silk strands, according to the method described by Soutter⁶¹, of Boston. The after treatment is extremely important, and no operative measures should be undertaken unless this can be carried out thoroughly. The part should be held in plaster for from six to twelve weeks, which should then be removed daily for massage and light exercises. No strain of the part should be permitted for at least six months, and throughout that period muscle training should be constantly carried on.

Lovett states that the result of treatment in a long series of cases in the Boston Children's Hospital and reports of some forty orthopedic surgeons show great improvement in results, and make the operation strongly to be recommended in suitably selected cases. Previous failures have been due largely to poor selection of cases, failure to previously correct existing deformity, and insufficient after treatment. Less important causes have been a tearing away of tendons from their new attachments, the

use of too weak muscles or of muscles the previous function of which was too unlike that for which they are to be used or which are made to pull at too great an angle from their previous directions, too little tension of the transferred muscles, insufficient shortening of stretched muscles and operation on cases that are too young (under five or six years) or too soon after initial onset (less than two years).

Second. *Nerve Transference*.—Considerable recent work has been done in this line, notably by Spitzky⁶², of Gratz, Taylor⁶³ and Murphy⁶⁴, of Chicago. In Murphy's series of twelve cases he reports five improved, but the results of this method are still too limited to permit any definite conclusions.

Third. *Arthrodesis*.—This operation is applicable when, owing to complete paralysis, there is a useless flail joint which makes walking impossible without the aid of apparatus. It should never be performed under the age of eight and is better after ten, since, at a younger age, feeble fibrous union is a common result, and from the removal of too much cartilage there is a subsequent irregularity of growth, resulting in various deformities. The ankle and mid-tarsal joint are most amenable, next the knee, and rarely the hip and shoulder, the last only in occasional cases of dislocation. The operation should not be attempted in less than two years from the onset of the paralysis, as up to that time there is still hope of the return of some muscle function. Previous correction of the deformity should have been done to prove without a doubt that the paralysis is complete and that it is not a case of muscles not paralyzed but over-stretched.

The operation should be preceded by correction of any remaining deformity by use of the wrench and by tenotomy. At the end of the operation the parts should lie in direct apposition when the deformity is over-corrected, and this is accomplished by removing skin flaps, shortening all stretched tendons and removal of graduated wedges of bone. These wedges of bone should never be taken from the tibia, for fear of injury to its epiphysis, but from the astragalus; and it is often necessary to remove also the astragalo-scapoid joint. Plaster or other splints should be used for from two to three months until union is complete, and apparatus should be used thereafter for a sufficient length of time. Jones reports most excellent results, with practically no failures of bony union in cases over ten years of age.

Developmental Treatment.—This is of the greatest importance in both the operative and non-operative treatment. Electricity is useless except as a matter of exercise, massage improves nutrition and the muscle tone and stimulates the circulation, but muscle training is of more importance than either, especially during the convalescent stage and after tendon transplantation, when the muscles must be educated in their new relations.

CONCLUSION.

In presenting the above review I have, chiefly from lack of time, omitted many single articles of perhaps equal or greater value, while certain important main divisions of the subject, as acute and chronic fractures, bone tumors, deformities due to rachitis and other similar conditions, and congenital and static deformities, have been unmentioned or barely touched upon, and I hope that some of these will be brought out in the discussion, even if they have not been included in the review itself.

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Dr. Dunlop said that the review had been complete and nothing remained to be added. It seemed to him that Codman had struck the keynote in the problem of joint-pain when he said that the diagnosis "chronic rheumatism" is merely an expression of ignorance. Dr. Dunlop believed that this term would disappear if we would make an accurate study of each case of joint-pain in the light of recent advances in the knowledge of these conditions.

Dr. Bryan had been much interested in the connection between chronic arthritis and diseased conditions of the tonsils. He had seen a number of cases with Dr. Erving to determine whether there was present any absorption from the tonsillar crypts, although most of these were too advanced to make out any direct connection between the joint disturbance and the condition of the tonsils. Dr. Bryan mentioned a case of chronic infection of the ethmoidal and sphenoidal sinuses in which there developed inflammation of the kneejoint.

Dr. Bishop took exception to the statement that electricity could only act beneficially by virtue of its stimulating the muscles to exercise. At this time it seemed to him that a medical man took much upon himself to assume such a position. Since we know that when the electric current is applied to the body there is a constant exchange of electrolytes, there are constant currents of ions flowing within the body, we must know that there will be nutritive, chemical effects upon the tissues within the sphere of electric influence.

Dr. Erving had little to say in closing the discussion. The remarks of Dr. Dunlop were much to the point. The influence of chronic absorption of toxic materials upon the joints is of the utmost interest and importance, and the case cited by Dr. Bryan had aptly illustrated this fact.

RURAL AUNT TO CITY NEPHEW: "And what do you work at when you are at home?" Nephew: "Why, I attend a medical school; I am studying for a doctor." Aunt: "Do tell; ain't the doctor able to do his own studying?"

THE PROBLEM OF MILK PRODUCTION IN THE
DISTRICT OF COLUMBIA.*

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Indisputable evidence has been constantly accumulating of the dangers from contaminated milk products. Fortunately, the knowledge of the methods for their prevention has progressed with equal rapidity. As this Medical Society and its individual members have been active workers in helping to secure and disseminate this knowledge, it seems appropriate to submit here extracts from the paper upon these subjects which I presented to the Sixteenth International Medical Congress, held in August and September last at Budapest, and some diagrams and pictures selected to illustrate the paper.

The work of the Society along this line began as far back as 1894, when the committee on the causes and prevention of typhoid fever in the District of Columbia made its report. I had the honor of introducing the resolution calling for this investigation, and was made chairman of the committee. The other members of this now historic committee were Drs. W. W. Johnston and C. M. Hammett. How deeply do I lament that they are not alive today to witness the world-wide influence of their work.

The influence of two recommendations in the committee's report was immediately noticed:

9. "Careful inspection of all dairies in the District from which our milk supply is drawn, and the enactment of a law by which no milk shall be sold in the District without a permit from the health office. The inspection should cover an examination at the dairies of all possible sources of infection, including the water supply.

10. The urging upon the members of the profession of a careful collation of all facts bearing upon the mode of infection in each case, and the advantage of reporting such facts to the Society, and the propagation of the doctrine that immediate disinfection of the stools is the first duty of the physician as guardian of the health of the community."

Instantaneously with the adoption of this report the District Commissioners sought the aid of the Medical Society toward framing and securing the passage of the milk law, which was ap-

* Read before the Medical Society, November 24, 1909.

proved March 2, 1895. This law gave to the Health Officer the power suggested in the recommendation named above of requiring inspection and a permit both for the farm and the city depot before milk could be sold in Washington. Dr. Woodward was appointed Health Officer. His appointment was the result of the endorsement of members of the Medical Society. He instituted the registration of the results of the inspection of the farms and depots upon cards, known as score cards.

Washington has the honor to be the first city in the country to require inspection and the institution of the score cards. It is most gratifying to learn that the effect for good has rapidly spread throughout the country. The Dairy Division of the Department of Agriculture has been very active in introducing these score cards and giving instructions as to their use. They have since been introduced in thirty-three States. In response to a request from the authorities of Toronto, Canada, where also the system has been adopted, the Department of Agriculture has fully explained to them the methods in use in this country.

The Dairy Division above mentioned, under date of August 12, 1909, very succinctly gives the present status of the work done along this line for the improvement of the milk supply. It shows the absolute necessity for proper inspection. State and municipal authorities should provide an ample number of specially trained inspectors. While it is desirable to detect fraud and improper actions in handling dairy products, it is equally important that the inspectors should be well qualified to impart information how to improve the insanitary conditions that frequently prevail. Inspection should educate. It has been found, time and again, that the handlers of dairy products have welcomed criticism and have proceeded at once to remedy defects. This has often been done at an insignificant outlay.

While the milk law of 1895 has accomplished much, there is in the light of advanced knowledge much to be done, and it is eminently desirable that members of this Society shall again enlist in the movement for improved legislation. It is well known that the country looks to Washington, the nation's capital, for model legislation and advanced work in sanitary matters.

The good work done here does not stop at the boundaries of our own country, but exerts an influence in many foreign countries. The following reference to Circular No. 114, Bureau of Animal

Industry, in the preparation of which several members of this Society took an active part, shows in what estimation this work is held in England. Circular 114 is the report of the proceedings of the Washington Milk Conference held in the spring of 1907, at the invitation of the Commissioners of the District of Columbia. This editorial from the *Lancet*, London, 1907, Vol. II, pp. 936-7, gives a very good idea of the report, especially of the classification of milk.

FEDERAL TEXT-BOOK ON PURE MILK QUESTIONS.

The Agricultural Department at Washington has issued a volume of reports containing the results of the conference of experts called together by the Department to consider the various questions now agitating the country in regard to the purity of the milk supply. The conference consisted of thirty-five recognized experts in the study of the questions involved. This volume will be the recognized text-book of the health authorities of this country for the present, as it carries the weight of authority of these experts and the endorsement of the Department of Agriculture. In brief, these experts agreed upon a definite milk program and have recommended that public safety should be assured by legislation establishing three classes, or grades, of milk—namely: Certified, Inspected and Pasteurized. They would not tolerate any trifling with the public in the sale of so-called certified milk. They would require that such milk should come from dairies subject to periodical inspection and that the milk should be frequently analyzed; that the cows should be proved to be free from tuberculosis by the tuberculin test and from all other communicable diseases; that the milk should be handled by persons free from infection; that the milk should contain not more than 10,000 bacteria to the cubic centimeter; and that it should be not more than twelve hours old when delivered to the consumer. The conference would permit the sale of such milk raw, under the label “certified,” and would allow the sale of raw, under the label “inspected,” of milk that had been similarly produced but did not quite come up to the requirements for certification, provided that such milk came in all cases from tuberculin-tested cows and did not contain more than 100,000 bacteria to the cubic centimeter. Such milk, and only such, do these experts believe should be sold raw; all other milk should be pasteurized. The declaration of the conference is as follows: “Milk from dairies not able to comply with the requirements specified for the production of milk of Classes 1 (certified) and 2 (inspected) is to be pasteurized before being sold and then sold under the designation ‘pasteurized milk.’ All milk of unknown origin shall be placed in class 3 and shall be subjected to

clarification and pasteurization at central pasteurization plants, which shall be under the personal supervision of officers of the health department. The term 'pasteurization' is explained to mean the heating of milk to a temperature of 150 degrees F. for twenty minutes, or 160 degrees for ten minutes, and immediate cooling to 50 degrees.'

Another evidence of the value of suggestions made here in the Society is in the recommendation made in the report of 1894 as to the importance of the examination of the water supplies of dairy farms. Notwithstanding that writers from that day to the present have uniformly endorsed the findings of the committee that prepared the report, I have not been able to find that a single Government, State or municipal officer has made any extended series of bacteriological investigations, the only absolutely reliable method, of such water supplies, previous to those made at my request by the Department of Agriculture in the fall of 1906. An astounding revelation of contamination of these water supplies was presented to this Society by Mr. Kellerman, in January, 1907.

It is true that Dr. Kinyoun examined six samples in 1895 and found four of them contaminated with sewage bacteria. There are now available the results of the examination of the water supplies of more than 1,000 farms. The revelations of contamination are equally astounding in other States as they have been in the vicinity of Washington. Examinations have been made in the District of Columbia, Maryland, Virginia, Massachusetts, Illinois, Wisconsin and Minnesota. The latest report issued, Nov. 6, 1909, as Bulletin 154, Bureau of Plant Industry, Department of Agriculture, shows that out of 79 samples of water from as many farms in Minnesota 59 were polluted, and on 23 of these farms there was a record of typhoid fever. These studies have confirmed the contention of the danger from this and other contaminations of milk. It is needless to repeat the evidence that is known to all of the numerous outbreaks of infectious diseases, as well as the terrible mortality among infants that had been traced to contaminated milk. The diagram prepared by Dr. Woodward for Bulletin 41, Bureau of Public Health and Marine Hospital Service, shows graphically the marked diminution in infant mortality since the passage of the milk law in 1895. The article by Dr. Wiley in this same Bulletin shows the results of the examination of samples of ice cream made in this city. It also is very

instructive. In addition to showing the enormous number of bacteria present the variety of bacteria is shown. In some samples streptococci or the colon bacilli were found, in many samples both varieties were found in large numbers. This points to the necessity of continued careful scrutiny of this very common article of diet.

In an article in *Science*, February 19, 1909, Dr. Stiles, of the Bureau of Chemistry, Department of Agriculture, shows the behavior of the colon and typhoid bacilli in milk at temperatures from 53 to 63 F., near the freezing point and near the zero point. He showed that both proliferate with rapidity above the 50-degree line. At the freezing point and below growth is retarded. The facts stated here are very instructive; they show that it is imperative to cool milk below 50 F., as soon as possible after milking and to keep it at that temperature. The influence of the lower temperature shows that when lowered to these degrees, milk can be safely kept for a prolonged period, thus enabling it to be carried long distances, both by land and water. The question as to the effect of freezing milk is one that must be further studied. Recent observations have maintained that the cream is equally distributed and freezing does not have any injurious effect.

In addition to the above interesting facts, the behavior of bacteria in milk at temperatures above 50 F. helps to explain the prevalence of typhoid fever in winter in communities, where the temperature goes for any extended period over the 50 F. line.

The well-known contaminated water supplies, the existence of bacillus carriers and the fact that typhoid fever is especially common in rural communities, point to milk as a continuous source of the fever in Washington. I have always maintained that milk was the principal source of this disease in this District. Now, in view of all the knowledge that has been accumulated, I positively reassert this opinion. The methods of securing a safe milk supply have been very fully shown in the paper which I presented. The necessity for observing the classification of the Washington Milk Conference as outlined in Circular 114 is fully sustained. This emphasizes high-grade inspection and perfect pasteurization for milk that cannot be guaranteed for classes 1 and 2.

The value of my paper is enhanced by the fact that the points

brought out are sustained by articles prepared by Drs. Wiley, Mohler, Schroeder and Rosenau. They all agree that dairy products are disseminators of serious diseases, and endorse the measures heretofore recommended. These are emphatic for rigid inspection, both at the farms and the city depots. To accomplish this it is imperative that the Health Officer should be provided with an ample corps of well-trained inspectors and a properly-manned and equipped bacteriological laboratory to promptly determine the many health problems that hourly arise in his department.

Dr. Woodward said that the late hour precluded any extended discussion of Dr. Magruder's paper, but he thought there should be some expression of recognition of the value of Dr. Magruder's work for the improvement of the local milk supply, a work which had been long and arduous, and which had been not only a labor of love but a labor involving great financial outlay to Dr. Magruder. Dr. Woodward expressed also his appreciation and recognition of the important aid given by the Medical Society in securing the legislation necessary to effect improvement in the milk supply of Washington. Much remains to be done, and though legislation is important and necessary for providing the control over the industry, public education is no less important and should be extended as rapidly and as widely as possible. Physicians, however, should be the first to show the fruits of this education, and he urged upon the profession the importance of making thorough personal investigation of the quality and source of milk used in the physicians' homes.

Dr. Magruder said that very much may be done without additional legislation by continuing the system of inspection already so productive of good and by educating the public to the danger of bad milk and thus strengthening the insistence of the demand for good milk. Physicians and Hospital authorities may do much to increase the ardor of milk dealers for cleanly ways by following the suggestion of Dr. Woodward to fully satisfy themselves, for their own and their patients' sake, as to the reliability of the milk used, and by submitting samples of suspected milk to the Health Department for investigation. Every condemnation of bad milk is an argument to the consumer and the dealer to be more careful.

PHYSICIANS IN STATE LEGISLATURES.—The *Jour Med. Society New Jersey*, December, 1909, states that in the recent elections in that State a physician was elected to the Senate and another to the Assembly; several other physicians were elected Mayors of cities, three of them reelections by large majorities.

CASE OF POISONING FROM THE BITE OF A
COPPERHEAD SNAKE (*ANCISTRODON*
CONTORTRIX).*

BY PRENTISS WILLSON, M. D.,

Washington, D. C.

The following case of poisoning from the bite of a copperhead is reported to call attention to the mildness of the symptoms following some cases of snake-bite and also to the possibility of the occurrence of such accidents in the immediate vicinity of Washington.

Mr. D., about 35 years of age, weight 150 pounds, general health good, was bitten about 5 P. M. October 6th, on the radial side of the last phalanx of the index finger. The accident happened near the District line and the Conduit Road. The snake was a small copperhead and was thought by Mr. D. to be the common milk snake (*Ophibolus doliatu*s). On this supposition it was carelessly picked up and promptly inflicted a bite in the situation described.

The wound was apparently made by only one fang, and consisted of a small abrasion around which there immediately appeared a small ecchymotic spot about as large as a pea. The pain was about equal to that of a bee-sting. The circulation in the bitten finger was at once controlled by means of a ligature, which was allowed to remain for about an hour and then completely removed. At this time the finger was greatly swollen and discolored. That night the entire hand was considerably swollen and a blister formed at the wound. There was no pain after the removal of the ligature.

The case came under observation the following afternoon, about twenty-four hours after the bite. At this time the swelling extended half way up the forearm. There was no ecchymosis, however, except a few spots on the finger. The axillary glands were enlarged and somewhat tender. Some hours before being seen by me the wound had been opened slightly and treated with a solution of potassium permanganate. The following morning, thirty-six hours after the bite, the swelling extended to the elbow, but began immediately to subside. The incision made

* Reported to the Medical Society, November 3, 1909.

in treatment became slightly infected, but finally healed without difficulty. Three weeks after the bite the incision was entirely healed, but the finger was still larger than the corresponding one on the opposite hand and slightly stiff.

At no time were there any constitutional symptoms of any description.

The treatment by incision and potassium permanganate, while the recognized procedure, probably only did harm, as evidenced by the infection. The only other treatment employed was a mild moist bichloride dressing for a few days to combat any tendency toward infection. If the case had been under observation from the beginning the treatment would have been a simple occlusive dressing.

The mildness of the symptoms in this case illustrates the necessity of exercising some judgment in the treatment of cases of snake poisoning in order that the cure shall not be worse than the disease. I have seen another case of poisoning from the bite of a copperhead in which the worst symptoms properly attributable to the venom were swelling and a slight ecchymotic discoloration of the forearm, but in which there was grave danger of phenol gangrene of the bitten finger because of the treatment before the case came under observation. The fact that all crotalin venoms, rattlesnake, copperhead and water moccasin alike, produce a marked diminution of local and general resistance to infection should be borne in mind. For this reason treatment by incision and potassium permanganate solution should be reserved for cases in which the size or species (rattlesnake, water moccasin) of the snake or the age of the patient adds some element of danger.

CASE OF INTERSTITIAL ECTOPIC PREGNANCY.*

BY HENRY D. FRY, M. D.,

Washington, D. C.

The gestation sac containing the embryo was in the left cornu of the uterus.

Patient 29 years old, mother of three children, the youngest 20 months old. Menstruated April 15, 1909, fourteen days late. Menses appeared again in May and continued intermittently

* Reported, with specimens (gelatine preparations), to the Medical Society, November 3, 1909.

until she was first seen by Dr. Fry, September 18th. The longest interval without the flow during that period was five days. No clots or shreds passed. Complained of physical weakness, shortness of breath and backache. *Examination* showed a tumor posteriorly in Douglas' sac, about the size of an apple. Fundus of uterus felt on right side of mass. The sound entered three inches in a normal direction. *Diagnosis*: Myoma, with incomplete abortion. Operation. Curettage and supravaginal hysterectomy.

Dr. Chappell was inclined to think that the specimen had been removed from a patient who had at one time in the course of this pregnancy been under his care. As he did not operate, of course he did not make the diagnosis. He had been called to see the woman for what was thought to be prolonged menstruation; rest in bed for a few days seemed to remedy the matter. Later he was called again for the same trouble, and on account of an injured hand did not examine the patient by vagina; he advised further rest in bed, and the patient was soon able to be about. The next information about her was what Dr. Fry had just related. The specimen was most interesting, and he was glad to see it.

Dr. D. S. Lamb said that Dr. Fry and he had looked over the specimens in the Army Medical Museum and had found none such as had been just exhibited. He took the opportunity to say that he had seen many pathological preparations, but none that excelled Dr. Fry's specimen in manner of mounting and preservation of color.

In Memoriam.

DR. CHAS. ALBERT BALL.

Dr. Chas. Albert Ball was born January 24, 1851, in Alexandria County, Virginia. He was the son of Robert and Elizabeth A. Ball, descendants of Revolutionary stock. He received his early education in the schools of the District of Columbia, and graduated from the Medical Department of the Columbian University in 1877. He practiced medicine here continuously until the time of his death, which occurred September 3, 1909.

The cause of death was cancer of the cheek and neck, which made its appearance about two years before his death. In

August, 1908, he submitted to operation for removal of the growth, and between that time and the following July four other operations were performed in the vain attempt to get rid of the disease—all of which he bore with remarkable patience and fortitude.

Resolved, That the members of the Medical Society of the District of Columbia have learned with regret of the death in the prime of his professional career of our friend and fellow member, Dr. Charles A. Ball.

Resolved, That in the death of Doctor Ball the community has lost a worthy citizen, his patients a hardworking and conscientious physician, and the members of the profession a courteous and congenial companion.

Resolved, That the members of his family be furnished with a copy of these resolutions.*

C. W. FRANZONI, M. D.,
GEORGE TULLY VAUGHAN, M. D.,
B. G. POOL, M. D.,
Committee.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, November 10, 1909.—The President, Dr. E. A. Balloch, presided; about 90 members present.

The resignation of Dr. William Malcolm was accepted, and a letter of introduction of Dr. Malcolm to the North China Medical Missionary Society was granted.

A letter from the Librarian of the Public Library of the District of Columbia, which requested early action upon the question of the disposal of certain medical literature which had been placed in the Public Library by this Society, was referred to the Executive Committee.

Dr. T. A. Claytor read the essay for the evening: "A More Liberal Diet in Typhoid Fever." Discussed by Drs. Nichols, G. L. Magruder, G. W. Cook, J. D. Thomas, Roy, F. Leech, Williams, Lochboehler, Acker and Claytor.

Dr. W. G. Erving read a "Review of Orthopedic Surgery." Discussed by Drs. Dunlop, Bryan, Bishop and Erving. See p. 383.

* Adopted by the Medical Society, November 24, 1909.

Wednesday, November 17.—The President, Dr. Balloch, presided ; about 65 members present.

Dr. Mackall, for the Executive Committee, recommended that the medical literature now in the Public Library of the District of Columbia be sent to the Medico-Chirurgical Faculty of Maryland for distribution among medical libraries of the United States, the distribution to be determined by the aforesaid Faculty. The recommendation was adopted.

Dr. D. S. Lamb, Chairman of the Committee on History, presented a report of the completed work of his committee. The report was accepted. On motion, the thanks of the Society were tendered the members of the Committee on History. See p. 415.

Dr. Noble P. Barnes read a Review of Therapeutics. Discussed by Drs. Barton, Lochboehler, Williams, Kober, Bishop, Roy and Barnes.

Wednesday, November 24.—The President, Dr. Balloch, presided ; about 40 members present.

Dr. Franzoni, from the committee appointed for the purpose, offered resolutions of respect to the memory of the late Dr. Chas. A. Ball, which were unanimously adopted. See p. 411.

The Recording Secretary was instructed to invite the members of the senior classes in medicine in the Georgetown and George Washington Universities, through the deans of the respective institutions, to attend the next meeting of the Society.

The Treasurer announced the receipt of a number of subscriptions to the History of the Society, several members of the Society having taken one or more extra copies for distribution to public institutions. He made the announcement in the hope that other members would do likewise.

On motion, an appropriation of \$145.21 was granted to pay for the publication of the November number of the ANNALS.

Dr. Hasbrouck read a "Review of Surgery." Discussed by Drs. Vaughan, Staples, Hagner and H. H. Kerr. See p. 374.

Dr. G. Lloyd Magruder read a résumé of the work done in the problem of milk production in the District of Columbia, and the present status of the question. Discussed by Drs. Woodward and Magruder. See p. 403.

Wednesday, December 1.—The President, Dr. Balloch, presided ; many members and guests present.

The Treasurer presented his report for November, showing : Receipts, \$274.00 ; disbursed, \$164.95. An appropriation of \$345.05 was made to defray the expenses of the Corresponding Secretary.

Dr. Wm. A. White addressed the Society upon the subject of "The Care and Treatment of the Insane ;" illustrated with

stereopticon pictures. A unanimous vote of thanks was given Dr. White.

Wednesday, December 8.—The President, Dr. Balloch, presided; about 80 persons present.

Dr. Middleton S. Elliott, U. S. N., was elected a member by invitation.

The President announced the following appointments of Essayists and Reviewers for the coming year:

Essayists—

January,	. . . . .	Dr. A. L. Stavelly.
February,	. . . . .	Dr. Henry P. Parker.
March,	. . . . .	Dr. C. W. Richardson.
April,	. . . . .	Dr. W. F. M. Sowers.
May,	. . . . .	Dr. J. T. Kelley.
October,	. . . . .	Dr. Isabel Haslup-Lamb.
November,	. . . . .	Dr. Edward E. Morse.
December,	. . . . .	Dr. Charles S. White.

Reviewers—

January,	Dr. John D. Thomas,	Internal Medicine.
February,	Dr. N. R. Jenner,	Obstetrics.
March,	Dr. Frank Hagner,	Genito-urinary Surgery.
April,	Dr. W. A. Jack,	Surgery.
May,	Dr. W. M. Barton,	Therapeutics.
October,	Dr. Prentiss Willson,	Pediatrics.
November,	Dr. Robert Scott Lamb,	Ophthalmology.
December,	Dr. J. Wesley Bovée,	Gynecology.

The Secretary read a letter of thanks from the College of Physicians of Philadelphia for a copy of the History of the Medical Society.

Dr. Vaughan took the chair, and President Balloch delivered the annual Presidential address, his subject being, "The Importance to the Community of an Educated Medical Profession." See p. 349.

A vote of thanks to the President for his address and for his services as presiding officer was unanimously adopted.

Mr. F. V. Coville, representing the Washington Academy of Sciences, briefly addressed the Society upon the subject of a proposed home for the Academy of Sciences and its affiliated Societies, to be secured by coöperating with the George Washington Memorial Association in the erection of a building commemorative of George Washington. Dr. Kober also spoke upon this subject.

The Society adjourned *sine die*.

EIGHTH INTERNATIONAL ZOOLOGICAL CONGRESS; to be held at Graz, Austria, August 15 to 20, 1910.

REPORT OF COMMITTEE ON HISTORY OF THE
MEDICAL SOCIETY OF THE DISTRICT
OF COLUMBIA.

WASHINGTON, D. C., *November 17, 1909.*

TO THE MEDICAL SOCIETY, D. C.

The Committee on History respectfully submits the following report: In view of the fact that the results of the labors of the committee have already appeared in more or less detail in the published volume, an elaborate report does not seem necessary. The original appointment of the committee in 1906, the changes in its personnel, a brief statement of its work and of the sources from which were obtained the information that was the basis of the History, have appeared in the Preface to the book. Again, under the head of "Active Membership," pages 209-213 and 379, is stated the action of the committee in regard to the biographical sketches and the sources whence was obtained the information that was the basis of the sketches.

It may be mentioned here that the preliminary memoranda and extracts were typewritten in duplicate, one copy being used as a working copy, the other being held in reserve against possible accident to the working copy, inasmuch as at least five persons constituting the committee had to handle the copy. The wisdom of this precaution appeared more than once during the progress of the work, and especially in the later days of publication, when some copy sent through the mail was not received back until after the book was out, and another part of the copy was lost by a messenger and never recovered.

It may be stated here also, as was repeatedly stated to the Society, both orally at the meetings and also in successive issues of the ANNALS, that many members persistently deferred giving information to the committee in regard to personal sketches until the opportunity had passed; and this in spite of letters, telephone calls and other reminders. This fact explains the much-to-be-regretted brevity of many sketches. The members of the committee took occasion to add from their own personal knowledge much of interest that appeared in the sketches.

Although the work of the committee covered a period of more

than three and a half years, and there were many differences of opinion in regard to the various matters that came up for consideration, these differences were adjusted without disturbance of the amicable relations that existed between the members of the committee.

Every effort was made, consistent with the necessities of the work, to keep down the expense. The actual cost up to date will be reported by the Treasurer of the Society, who was a member of the committee. There will be a balance for postage—a small sum—to be presented, and in order to further distribute the books, by mail or otherwise, there will be an expense to be met. Each member of the committee has been to some personal expense in discharging his duties, but bills for the same will not be presented. The necessary time that each has given to the work has been considerable.

There are still between 600 and 700 copies of the book in hand, and the committee has considered the question of disposing of them. The following means have been suggested:

1st. That as many members of the Society as can do so send copies to personal friends, especially medical friends, residing elsewhere.

2d. That as many members of the Society as can do so send copies to educational institutions, especially those from which such members have graduated.

3d. It is also suggested that the Society place copies in the hands of reliable local booksellers, for sale—of course, with some discount to the sellers.

4th. That the Society send complimentary copies to prominent persons, medical and otherwise, and to prominent institutions, so that the book may become well distributed and in this way become well known; the effect of which should be to enhance the dignity and importance of the Society.

5th. Inasmuch as some members offered to make up or help to make up any deficiency in the receipts from assessments to cover the expense of publication, it may not be out of place for this committee to suggest that any member or other person who makes such a subscription would be entitled to the use of as many copies of the book as would amount to his contribution; the books to be distributed without further expense to him, to such persons or institutions as he might indicate.

The duty of the committee appears to have been discharged and, unless the Society has further work for it to do, the committee asks that it also be discharged.

Respectfully submitted,

D. S. LAMB,
C. W. FRANZONI,
G. WYTHE COOK,
R. T. HOLDEN,
LLEWELLIN ELIOT,
Committee.

WASHINGTON MEDICAL ANNALS.

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EDITORIAL COMMITTEE.

D. S. LAMB, A. M., M. D., *Chairman*, . . . 2114 Eighteenth Street, N. W.
BENJ. G. POOL, M. D., 945 Rhode Island Avenue, N. W.

Editorial.

THE HISTORY OF THE MEDICAL SOCIETY.—A number of copies of the History have been distributed in the following way:

One member, also a member of the Committee on History, has subscribed \$30.00 for ten copies, which he has sent to personal friends and to institutions in which he is interested.

Two other members have subscribed \$15.00 for five copies each, which have also been mailed to personal friends and institutions.

Several other members have subscribed for one or two copies each and have distributed them in the same way.

It is urged on other members to do the same thing, and in this way place the remaining copies in libraries and the hands of personal friends. A check to the Treasurer for one or more books at the rate of \$3.00 a copy, with a list of addresses, will assure the sending by mail to the addressees without any further trouble or expense to the sender.

The Treasurer is Dr. C. W. Franzoni, 605 I Street, N. W.

Any person who has subscribed for the book and has not received it should notify the Treasurer at once.

Appended are some complimentary notices of the book, received by Dr. J. Dudley Morgan :

John B. Larner, Esq., Washington : "I do not know when I have been so much entertained with a book as I have been with the History of the Medical Society, which you so kindly sent me on Saturday. It has brought back to me faces and places which had almost faded from my recollection. I think that this work is a great addition to the historical matter of our City."

From Mr. W. B. Bryan : "The Society is to be commended for its enterprize in gathering together so much and such valuable material."

From Mr. Arthur T. Brice : "It is very well prepared and I find it very interesting. Many of the good doctors enrolled on its pages were more or less well known to me, and a perusal of the work has taken me back to my boyhood days in the District."

From Allen C. Clark, Esq. : "For the History of the Medical Society of the District of Columbia I am deeply thankful. It is a contribution to the local history that I think has not been equaled. It shows that the medical fraternity has not only healed the ill but borne its share in all the other responsibilities of citizenship. The publication is an album of portraits, a well of reminiscence and an encyclopedia of biography. It is of such absorbing interest that if one has aught else to do he had better do it first."

SOMETHING MORE IN REGARD TO THE EXAMINATION FOR REGISTRATION OF PHYSICIANS IN THIS DISTRICT.

Failure in this examination is, of course, mainly due to ignorance of the subject, for which there is no other remedy than study and practical work. The following are some minor reasons :

Some answers are too brief ; they do not say enough ; they leave so much unsaid that the examiner doubts if the candidate has a sufficient knowledge of the subject.

Many answers fail to cover the *scope* of the question. For instance, one candidate, in answer to a question on the anatomy of the bile ducts, described only the bile capillaries and did not mention the ducts at all. The examiner may think that the candidate knows more of the subject than is stated, but can scarcely be justified in giving credit for such supposed knowledge.

Sometimes the candidate answers *some other question* than that which is asked. For instance, he describes the facial artery for the facial nerve, or the pneumogastric for the spinal accessory nerve. This kind of mistake is, of course, due to faulty attention. What should the examiner do under such circumstances? If the paper generally is a worthy one, may he give some small credit for the knowledge shown, although uncalled for; and if the paper is generally a poor one, should he be justified in concluding that the answer given is simply an evasion, given to cover up ignorance of the question asked?

The candidate may give answers that are obscure; the meaning is not plain. If the paper is otherwise good the examiner might be justified in giving some credit for the answer; but if otherwise poor, he would naturally conclude that the candidate was ignorant of the subject.

Sometimes a candidate answers a question in anatomy by giving, not the anatomy, but the physiology; sometimes to a question in pathology he gives the symptomatology, or gives only the morbid anatomy.

The following are some actual answers given:

Question on the histology of the blood; answer, that the blood is composed of a semipurulent serum.

Question on the anatomy of the liver; answer, that the liver is a musculo-membranous sack. It may be remarked here that many candidates appear to be ignorant of the actual course taken by the bile between the liver and gallbladder and intestine.

Question on bile ducts; answer, that the bile ducts are fibrous bands running through the liver, from the secretion portion to the hepatic lobule, and as these connect and get larger and larger the connective tissue forms a band, and the bile is collected in this manner.

Question on the anatomy of the tongue; answer, that the tongue is a spade-like organ. Another answer, that the tongue is supplied with sensations of heat and cold.

Question on the inferior maxillary bone ; many answer, that the inferior maxillary articulates with the superior maxillary. Again, many state that the humerus articulates with the clavicle. In the matter of joints the answers are commonly deficient, omitting mention altogether of the articular cartilage and the synovial membrane.

Question on the humerus—some spell it “humorous;” some state that the head of the bone is globular, which is incorrect ; it is only about a third of a globe.

Question on amputational neuroma ; answer, that it is a tumor found on a nerve, and by pressure amputates the nerve trunk. Another answered that it is the amputational form of neuroma that generally appears superficial, as when it forms in the eye. Another answer was that amputational neuroma is an infection of the tissues by the leprosy bacillus.

Question on the pathology of aneurism ; answer, that it is a condition in which there is a formation of a bloody tumor. Another answer, that it is caused by a foreign body floating in the blood, finding lodgment in an artery ; evidently confusing aneurism with embolism. Another answer was that it is found especially in coachmen and *calverymen*.

Question on trichinosis ; answer, that it is caused by the pork tapeworm.

Another error that is often made is placing the hematozoon of malaria and the ameba of dysentery among the bacteria.

THE ANNALS will publish any local medical news concerning the medical societies, hospitals, colleges and other institutions in this District, and the personnel of the same, whenever such news would be of general interest ; provided, of course, that the information is given by persons who are known to the Editorial Committee.

WASHINGTON MEDICAL AND SURGICAL SOCIETY.—President, H. Atwood Fowler ; Vice President, Chas. M. Emmons ; Secretary, Geo. H. Heitmuller ; Treasurer, Frank E. Gibson ; Curator and Librarian, W. G. Erving.

Program—1909-1910.

Essayist.	Date and host.	To open discussion.
Dr. Graham.....	Jan. 24, 1910, Dr. Jack.....	Dr. Gannon.
Dr. Hasbrouck.....	Feb. 28, 1910, Dr. Kaufman.....	Dr. Frankland.
Dr. Jack.....	Mar. 28, 1910, Dr. Miller.....	Dr. Fowler.
Dr. Kaufman.....	Apr. 25, 1910, Dr. Mitchell.....	Dr. Erving.
To be selected.....	May 16, 1910, Annual Banquet.....	— ———
Dr. Fowler,		
President's Address, Oct. 24, 1910,	Dr. Nevitt.....	— ———
Dr. Miller	Nov. 28, 1910, Dr. Egbert.....	Dr. Emmons.
Dr. Mitchell	Dec. 26, 1910, Dr. Gannon	Dr. Clark.

THE HIPPOCRATES SOCIETY, the object of which is "the cultivation and promotion of knowledge in whatever relates to the science of medicine and surgery," holds meetings on the second and fourth Thursdays of each month from October to May. The membership in this Society is limited to 25. The officers for the present season are: President, Dr. Edgar Snowden; Vice President, Dr. Arthur L. Hunt; Secretary and Treasurer, Dr. Laurence M. Hynson.

Schedule of Meetings for the Balance of the Session of 1909-'10.

Date.	Place.	Essayist.
Jan. 13.	Dr. W. W. Wilkinson, The Burlington...	Dr. Chas. M. Beall.
Jan. 27.	Smoker.....	Invited Speaker.
Feb. 10.	Dr. W. H. Syme, The Laclede.....	Dr. C. L. Davis.
Feb. 24.	Dr. G. S. Saffold, 1760 T St	Dr. Wilbur Brandenburg.
Mar. 10.	Dr. Carl Henning, The Rochambeau.....	Dr. D. G. Smith.
Mar. 24.	Dr. D. G. Smith, 3121 Fourteenth St.....	Dr. C. S. White.
Apr. 14.	Dr. C. L. Davis, 1342 Q St.....	Dr. Edgar Snowden.
Apr. 28.	Dr. E. L. Mason, 1909 Fourteenth St.....	Dr. L. M. Hynson.
May 12.	Dr. C. S. White, The Farragut.....	Dr. J. Lewis Riggles.
May 26.	Smoker.....	President's Address.

THE THERAPEUTIC SOCIETY meets on the first Saturday in each month at the G. W. College of Pharmacy, 808 I Street, N. W. Secretary, Dr. S. R. Karpeles, 1102 Fifth Street, N. W. Physicians invited.

ADRENALIN IN A NEW PACKAGE.—Parke, Davis & Co. announce that in addition to the ounce vials in which it has hitherto been supplied, Adrenalin Chloride Solution is now being

marketed in hermetically-sealed glass containers of 1 cubic centimeter capacity. "Adrenalin Ampoule" is the name used to designate the new package, and the solution is of the strength of 1 to 10,000 (one part adrenalin chloride to 10,000 parts physiologic salt solution). The solution seems to be a necessity in medical and surgical practice. The most powerful of astringents and hemostatics, it lends itself to many practical uses and at little risk of injury in reasonably careful hands. Since the time of its introduction it has been marketed in ounce vials, and of the strength of 1 : 1,000. Experience has shown, however, that a weaker solution is much more frequently required than the "full strength;" and while it is generally an easy matter to dilute with water or normal saline solution, in certain emergencies an already fully-diluted preparation is to be preferred. While the danger of deterioration from occasionally opening a vial containing a solution of adrenalin chloride is not great, still, in consideration of the fact that a dose is needed now and then for hypodermatic injection, it is believed that the small hermetically-sealed package will be welcomed because of its greater convenience and security.

THE FOLLOWING LETTER has been received by the Editorial Committee. The committee would like to hear from members in regard to the proposition therein contained.

ILLINOIS MEDICAL JOURNAL.

Next annual meeting will be held in Danville, May 17, 18 and 19, 1910.

Office of the Editor, 522 Capitol Avenue.

SPRINGFIELD, ILLINOIS, Dec. 2, 1909.

D. S. LAMB, M. D., Editor, Washington, D. C.

My Dear Doctor: I have had in mind for some time to propose a sort of reciprocity between the journals of the different State medical societies, and, after talking it over with the Chairman of our publication committee, have decided to write you concerning the matter.

It seems probable that many members of each State medical society would profit by reading the issues of the journals of the other State societies and would be likely to become subscribers to one or more of these journals, if they were permitted to subscribe on the same terms as the members of the particular State society issuing the journal, and, with this object in view, I have to pro-

pose that you bring this matter before your publication committee at the earliest possible moment, to see whether some such inducement may not be offered to the members of our Society on the part of your journal, and thus you may secure a number of subscribers from our membership. On the other hand, we would offer to your membership the *Illinois Medical Journal* at the price we are giving it to our own members, namely, \$1.50, instead of the ordinary subscription of \$2.00, charged to outsiders under the present circumstances.

I believe that this proposition will appeal to many hundreds of practitioners throughout the United States, and in this way the common interests of all journals might be very much advanced.

I think the only limitation that should be put upon such a proposition in our State would be that the journals of other States in their advertising columns conform to the rules laid down by the A. M. A. committee in their advertising columns.

Probably your journal conforms to these rules at this time, but if not, it might be more profitable for you to drop some of the questionable advertisements for the sake of securing subscriptions from our membership.

Please let me hear from you regarding this matter at your earliest convenience, and greatly oblige,

Yours very truly,

GEO. N. KREIDER, M. D., *Editor*.

BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.—A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B Street, S. E., Washington, D. C., Monday, January 24, 1910, at 10 o'clock A. M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

THE FOLLOWING LETTER, addressed personally to Dr. D. S. Lamb, is printed to show that an interest is felt in the Medical Society as far away as San Sebastian, Spain. It may be of some

interest to state that this city is a fortified city situated on a small peninsula in the Bay of Biscay; it is enclosed by walls and commanded by a citadel on an adjoining height. It was destroyed by fire and siege in 1813, but has since been handsomely rebuilt.

The purport of the letter is an application to be made a "foreign" member. We have no such class of membership; it is for the Society, of course, to decide whether it will establish such a class. Dr. Osler is a foreign member, but is on the Honorary list. The matter will be brought before the Society as soon as practicable.

A Monsieur le Président de la Société de Médecine de Washington :

Le soussigné, Docteur en Médecine et Chirurgie, ex-interne pensionné des Cliniques de la Faculté, membre de diverses corporations scientifiques, lauréat de Concourse publics et rédacteur de revues professionnelles, se permet d'exposer la demande suivante.

Désirant appartenir comme membre étranger à la Société que vous dirigez avec tant de succès, il vous demande de bien vouloir user de votre influence pour le faire agréer par ladite Société.

Dans l'espoir que sa demande trouvera bon accueil près de vous, il vous prie, Monsieur le Président, d'agréer l'hommage de son respect.

San Sebastian (Spain), le 30 Novembre, 1909.

(Signed) DR. CIRIACO YRIGOYEN.

Accompanying this letter was a long list of titles and of published works; also a note as follows:

Monsieur: J'ai l'honneur de vous remettre la ci-jointe instance, aspirant au titre de membre de la Société et j'attends que vous influiez avec ses membres pour obtenir le titre indiqué. J'ai le plaisir de vous offrir mes services et en bien vous remerciant d'avance veuillez agréer, Monsieur, mes sincères salutations. Je désire que la réponse soit en français ou en espagnol.

EXCHANGES.

American Journal Surgery.

Buffalo Medical Journal.

Bull. El Paso Med. Society.

California State Journal Medicine.

Colorado Medicine.

Cronica Medica Mexicana.
Journal Kansas Medical Society.
Journal Medical Society New Jersey.
Journal Missouri State Medical Association.
Journal South Carolina Medical Association.
Louisville Monthly Journal Medicine and Surgery.
Maryland Medical Journal.
Medical Council.
Monthly Cyclopedea and Medical Bulletin.
New York State Journal Medicine.
Northwest Medicine.
Old Dominion Journal of Medicine and Surgery.
Pacific Medical Journal.
Pathologica, Genoa.
Pennsylvania Medical Journal.
Proctologist.
Providence Medical Journal.
Texas State Journal Medicine.
Virginia Medical Semi-Monthly.
West Virginia Medical Journal.

PUBLICATIONS RECEIVED.

C. W. Stiles, "Soil Pollution and its Relation to Hookworm Disease and Typhoid Fever;" U. S. P. H. and M. H. S., 1909.

H. H. Donnally, "Intestinal Bacteria of Infants and the Use of Lactic Acid Bacteria;" also, "Present Knowledge of Whooping Cough;" reprints.

J. F. Anderson, "The Presence of Tubercle Bacilli in the Circulating Blood in Clinical and Experimental Diagnosis;" Also, M. J. Rosenau, "The Viability of the Tubercle Bacillus;" Bull. 57, Hygienic Laboratory, U. S. P. H. and M. H. S., September, 1909.

T. A. Williams, "Case of Traumatic Neurosis Illustrating Successful Psychotherapy;" also, "Importance of Early Diagnosis of Tabes and Cerebro-Spinal Lues;" also, "Rational Treatment of Tabes Dorsalis in Relation to its Pathogenesis;" reprints.

Truman Abbe, "Chloroform *versus* Ether at Columbia Hospi-

tal for Women ;" also, "Some Cases Treated with Radium ;" also, "Pancreatitis;" reprints.

R. W. Shufeldt, "Certain Gunshot Wounds Medico-legally Considered;" reprint.

Frank Baker, "The Two Sylviuses: an Historical Study;" reprint.

J. J. Valentine, "Treatment of Gonorrheal Epididymitis;" reprint.

F. C. Valentine and T. M. Townsend, three reprints: "How the General Practitioner Should Treat Gonorrhea—Urethral Hemorrhage;" "Massage of the Prostate and Stripping the Seminal Vesicles;" "The Indications for and Technique of Internal Urethrotomy—Vesical Retention of Urine."

C. S. White, "The Rôle of Heart Massage in Surgery;" reprint.

Samuel Theobald, "Summary of Results Obtained and Features of Interest in 215 Consecutive Cataract Extractions;" also, "Reflex Aural Neuroses caused by Eyestrain;" reprints.

F. H. Garrison, "Eponymic Expressions in Medical Literature;" reprint.

Annual Report of Surgeon General of Navy for 1908-9.

I. A. Abt, "Inquiry into the Status of the Kindergarten;" also, "Nervous Children;" also, "Congenital Syphilis in Infants;" reprints.

I. A. Abt and Mortimer Frank, "Rachitic Erosions of the Permanent Teeth Associated with Lamellar Cataract;" reprint.

Summary of Transactions of Public Health and Marine-Hospital Service; Fiscal Year 1909 and to November 1, 1909.

C. H. Lavinder, "Prophylaxis of Pellagra;" reprint No. 43; Public Health Reports, Vol. XXIV, No. 44, October 29, 1909. Also "Notes on the Prognosis and Treatment of Pellagra;" reprint (U. S. P. H. and M. H. S.).

Rosenau, Lumsden and Kastle, Report No. 3, on the "Origin and Prevalence of Typhoid Fever in the District of Columbia" (1908); Bulletin No. 52, P. H. and M. H. S., October, 1909.

J. H. Kastle, "Chemical Tests for Blood;" Bulletin 51, Hygienic Laboratory, U. S. P. H. and M. H. S., 1909.

L. F. Barker, "Some of the Clinical Methods of Investigating Cardio-vascular Conditions;" reprint.

Medical Miscellany.

The Medical Aspects of Athleticism.—Brooks, in *Brit. Med. Jour.*, Sept. 25, 1909, has a long article on this subject.

The Two Sylviuses.—Baker, in *Johns Hopkins Hospital Bull.*, Nov., 1909, discusses these two men who have been much mixed up with each other. Jacobus Sylvius, or Jacques Dubois, was born at Amiens, France, 1478; died at Paris, 1555. He was an anatomist and teacher of anatomy; also studied pharmacy. He was handicapped by poverty. He taught in Paris. Was unmarried. Franciscus De La Boë Sylvius was born at Hanau, Germany, 1614; died 1672. He came of an illustrious and wealthy family. He taught at the University of Leyden anatomy, clinical medicine, chemistry and physics. Was twice married. This is the Sylvius after whom are named the fissure of Sylvius and Sylvian artery, and the Sylvian or fifth ventricle of the brain. The so-called Sylvian aqueduct had been previously described.

Scopolamin=morphin Narcosis.—Leedham-Green, in *Brit. Med. Jour.*, Oct. 2, 1909, p. 962, states that in 4,762 cases the mortality was only one case. There were no grave respiratory after effects such as are seen following the use of ether, and he thinks that the mixture of scopolamin and morphin is the most human as well as the safest of general anesthetics.

General Movement of Typhoid Fever and Tuberculosis in the last Thirty Years.—Kober, in *Amer. Jour. Med. Sci.*, Nov., 1909, p. 642, has an article on this subject.

House Flies as Carriers of Disease.—Nash, in *Jour. Hygiene*, Sept., 1909, pp. 141-169, has a long article on this subject.

The Air of the Operating Room as a Possible Factor in the Infection of Wounds.—Robb, in *Jour. Obstetrics*, Sept., 1909, p. 451, considers this subject.

Immunity in Disease.—Noon, in *Jour. Hygiene*, Sept., 1909, p. 181, concludes from experiments that opsonic immunity is of real importance in determining recovery from an infection with bacillus pseudotuberculosis. The subcutaneous tissue of the rabbit has a *special* power not possessed by the peritoneum of reacting promptly to inoculations of killed cultures of the bacillus, with an increased production of opsonin. This is an instance of the production of antibodies. Intraperitoneal inoculation of the bacillus pseudotuberculosis, living or dead, produces an immunizing response after a considerable delay. Intravenous inocu-

lation of the living bacillus produces an immunizing response after a considerable delay. Cultures of the bacillus killed by heat at 60 C., contain more immediately available antigen than do equal quantities of living cultures, and hence constitute a more efficient stimulus.

Phagocytic Immunity in Streptococcus Infections.—Meakins, in *Jour. Exper. Med.*, Nov., 1909, p. 815, states that in infections in men with streptococcus, such as acute septic endocarditis and tonsilitis, a powerful opsonic immunity is produced; this immunity is effective toward the streptococcus that has caused the infection, but may be ineffective in the presence of streptococcus from other sources. Little benefit can be expected from streptococcus vaccines unless they are prepared from the streptococcus that has caused the infection.

Studies in Edema—Fleisher and Loeb, *Jour. Exper. Med.*, Sept., 1909, p. 650, state that direct measurements of blood pressure, carried out during the intravenous infusion of various solutions into rabbits, show that although a relation between height of blood pressure and secretion of urine may be noted, a direct relation does not exist between blood pressure and peritoneal transudate and intestinal fluid. Calcium chloride does not increase the peritoneal transudate by a rise of blood pressure, nor does it decrease the intestinal fluid by a fall of blood pressure, since no such increase of peritoneal fluid nor decrease of intestinal fluid is noticeable in animals with myocarditic lesions which are infused with solutions of sodium chloride. It can be proved that calcium chloride does not diminish the amount of urine as a result of its depressing action on the blood pressure. The experiments make it probable that calcium chloride decreases diuresis by direct action on renal epithelium.

Leukemia; Auer's Bodies.—Ottenberg, in *Amer. Jour. Med. Sci.*, Oct., 1909, p. 562, states that the rods of Auer can be found in many cases of acute leukemia; have never been found in any other disease; there is no evidence that they are parasites. The attempt to inoculate human leukemia in monkeys was unsuccessful.

Clubfoot; its Cure in Infancy Without Operation.—Ehrenfried, in *Boston Med. and Surg. Jour.*, Nov. 18, 1909, p. 741, believes that practically all cases of congenital clubfoot are curable without operation if taken in hand before the infant is six weeks old; the younger the infant the better. The routine treatment consists of manipulation followed by plaster bandage every two weeks, progressively overcorrecting the foot. As soon as the foot offers no resistance to overcorrection and naturally maintains

the normal position, a tin splint is worn at night, or a brace if the child is old enough to walk. Relapses will occur under any treatment if the after care is neglected; the patient should be kept under close observation for a year after apparent recovery.

Median Hare-lip.—Dun, in *Brit. Med. Jour.*, Sept. 18, 1909, p. 761, reports two cases.

Arthritis Deformans.—Nichols and Richardson, in *Jour. Med. Research*, Sept., 1909, p. 149, in a lengthy article profusely illustrated, conclude that in deforming arthritis, not tuberculous, there are two pathological types—the proliferative type which tends to destroy the joint cartilage and lead to ankylosis of adjacent joint surface; and the degenerative type, that also tends to destroy the joint cartilage and produces deformity but without ankylosis. These types are not different diseases, but represent the reaction of joint tissues to a variety of causes. In neither type, if the original injury is severe enough or the causative factor continues to act, is there any likelihood of regeneration of a perfect joint. Even if the primary cause ceases to act, the joint injury itself may continue to act in a vicious circle as a cause of continued joint change. Prognosis should be guarded.

Acute Orbital Periostitis Following Dental Disease.—Herman, in *Brit. Med. Jour.*, Sept. 25, 1909, p. 878, reports the case.

Multiple Wounds from a Single Bullet.—Lunn, in *Jour. Royal Army Med. Corps*, Oct., 1909, p. 436, reports a case. A mother and child were shot; the child was shot in the left forefinger, right forefinger and thumb, chin, left eyebrow, and the frontal bone was blown away; the mother was shot in the breast, two wounds, left forefinger, two wounds left arm; total ten wounds. The child died, the mother recovered.

Thymus Death.—Griffith, in *N. Y. Med. Jour.*, Sept. 4, 1909, p. 444, warns against drawing hasty conclusions in any case that an enlarged thymus has any etiological relation to sudden death.

Heart Massage in Surgery.—White, in *Surgery, Gynecology and Obstet.*, Oct., 1909, p. 388, after a study of the subject, some experiments and treatment of three cases, concludes as follows: Heart massage is an established method of resuscitation. Heart failure is rarely primary in chloroform anesthesia; it is therefore essential that respiration be invoked by artificial means in conjunction with heart massage. Artificial respiration alone will not start heart contraction nor maintain blood pressure. The best results of heart massage have been obtained by the sub-diaphragmatic method.

The most frequent indication for its use is in chloroform narcosis with cessation of respiration and circulation. The method is also applicable in other conditions of heart failure secondary to failure of respiration and not dependent on organic changes in the heart. The possibility of resuscitation has a definite relation to the time since cessation of heart beat and massage; the shorter the interval the more rapid the response to the massage.

Beri-Beri ; Uncured Rice a Cause.—Ellis, in *Brit. Med. Jour.*, Oct. 2, 1909, p. 935, considers this subject. There was an epidemic at Singapore. It was gradually broken up by the use of cured rice.

Bacillary Dysentery in the Danvers State Hospital, Massachusetts, in 1908.—A very elaborate report is made by the Laboratory of the Hospital in *Bost. Med. and Surg. Jour.*, Nov. 11, 1909, p. 679, *et seq.* The bacillus was the Shiga type. The reporters believe that the disease is endemic in the hospital; that there are intramural carriers; but that most of the cases might be blamed on flies.

Leprosy in the Philippines, and its Treatment.—Heiser, in *Amer. Jour. Med. Sci.*, Sept., 1909, p. 367, states that segregation has decreased the incidence of leprosy by over 50 per cent., and of all the treatments tried the x-ray is the only one that produced a cure, but is suitable only in selected cases.

Leprosy.—Wells, *Bost. Med. and Surg. Jour.*, Aug. 19, 1909, p. 251, reports a case admitted to the Massachusetts General Hospital.

Plague; its Various Types and their Clinical Manifestations.—Choksky in *Amer. Jour. Med. Sci.*, Sept. 1909, p. 351, has an article on this subject. He names the bubonic type, the cellulocutaneous, the septicemic, the pneumonic and the ambulatory; these types prevail in Bombay; there is a distinct racial incidence and fatality depending much on social conditions and environments. Among the Hindoos is the heaviest mortality, 76.57 per cent.; Mahomedans, 68.52 per cent.; native Christians, 65.80 per cent.; Parsees, 50 per cent.; Europeans and Eurasians suffer but little.

Pellagra. Extracts from the National Conference on Pellagra, held at Columbia, S. C., Nov., 1909.—*Jour. South Carolina Med. Assn.*, Nov., 1909. Sandwith, p. 478, said that in districts where maize is not cultivated or habitually eaten pellagra does not occur. In many districts where maize has been cultivated for

many years the disease has not appeared. In pellagra districts, in persons who live on a varied diet, using maize only occasionally and not as a staple cereal, pellagra rarely occurs. The disease requires for its production the habitual use of damaged maize.

Roher, same journal, p. 488, says that but three cases have been reported for Maryland. The disease is caused by the *aspergillus fumigatus*. The cases that occur in the autumn are recrudescences of the summer cases. The disease should be classed with the infective granulomata. Most cases follow a wet season, very few a dry season. The harvesting of corn by machinery is responsible for the prevalence of the disease in recent years; the exclusion of the ears of corn from air and sun favors the growth of the fungus.

Cole and Gilman, p. 488, state that transfusion is a means of combatting the anemia.

Whooping Cough ; its Microbe.—Bordet, in *Brit. Med. Jour.*, Oct. 9, 1909, p. 1062, states in regard to the bacillus, that he discovered that its vaccine is beneficial in this disease, but the optimum dose has not yet been ascertained. Possibly better results may be obtained from larger doses, but finality will not be assured until a trustworthy serum is obtained.

Anthrax.—Page, in *Jour. of Hygiene*, Nov., 1909, p. 279, states that in twelve years over 500 cases were reported to the British Home Office. There is a progressive increase in the number of cases in the woolen and worsted industries, probably due to the increased use of dangerous classes of wool. The disease is found among bristle and horsehair workers, among whom it is more fatal to women than men ; more so in manipulators of horsehair than in brushmaking ; horsehair is from eight to ten times more likely to cause the disease than brushmaking. The risk is greatest from Chinese, Russian and Siberian raw materials. The nature of the lesions varies with the industry ; inhalation of spores is uncommon except in the woolen industry. Pustules on the neck are more common among hide and skin workers, due to carrying the skins on the shoulder ; malignant pustule is most common on exposed parts. Infection usually by the nails that harbor the dust. Anthrax spores may retain their vitality for years on hair and other materials. The disease is common among animals all over Europe and Asia ; more evident during the summer months.

Pneumonia ; Alcohol in Treatment.—Holitscher (12th Internat. Anti-Alcoholic Congress, held in London, July 18 to 25), in *Med. Rec., N. Y.*, Sept. 11, 1909, p. 445, on statistics of 47 hospitals, compared results of treatment of lobar pneumonia with and without the use of alcohol. In 238 cases treated with alcohol

the death rate was 24 per cent.; in 248 treated without alcohol the rate was 21 per cent. The rule followed was to treat every alternate case with alcohol.

Lobar Pneumonia; Is it an Inflammation of the Lungs?—McConkey, in *Medical Record, N. Y.*, Oct. 30, 1909, p. 727, considers lobar pneumonia a bacteriemia, and the localization in the lungs is not an inflammation, but a process secondary in sequence and importance.

Pneumonia Treated by Inoculation.—Willcox and Morgan, in *Brit. Med. Jour.*, Oct. 9, 1909, p. 1050, often found a definite improvement in clinical symptoms, as, for instance, an immediate fall in temperature; dyspnea and delirium were lessened after the dose of vaccine. The duration of the disease seemed to be shortened. Sometimes the fever subsided by lysis. Sometimes a stock vaccine was of no benefit, while an autogenous vaccine caused rapid clearing up of symptoms.

Pneumococcus Infections.—Strouse, in *Jour. Exper. Med.*, Sept. 1909, p. 743, states that phagocytosis of pneumococci *in vitro* runs parallel with phagocytosis *in vivo*. The virulence depends not only on resistance to phagocytosis, but also on the ability to grow in the body of the animal. The pigeon is immune to pneumococcic infection because of its normal high temperature.

Typhoid Fever; Analysis of over 68,000 Cases.—Sallom, in *Med. Rec., N. Y.*, Nov. 20, 1909, p. 860, states that this report covers the period from January, 1898, to June, 1909; there were 8,102 deaths, a mortality of 11.75 per cent. Most cases occur in February, the next largest number in January, the least in July; the number then rises again, reaching a maximum in September, then falls until December. He states that after a study of the data he believes that filtration of the water of the Schuylkill River has decreased the morbidity in the districts supplied with the filtered water.

Intestinal Perforation in Children in Typhoid Fever.—Jopson and Gittings, in *Amer. Jour. Med. Sci.*, Nov., 1909, p. 625, state that perforation is very rare in children under five years of age; not infrequent afterwards; about half as common as in adults. Occurs usually at end of second or beginning of third week. The mortality under ten years old is less than afterwards, lower in relapsed than unrelapsed cases—somewhat less than 50 per cent. The earlier an operation is done the better the prognosis. Technique not materially different from that in adults, except in

the use of a general anesthetic and greater need for rapidity of operation and avoidance of meddlesome surgery.

Spontaneous Rupture of the Spleen in Typhoid Fever.—

Bryan, in *Annals of Surgery*, Nov., 1909, p. 856, says that this occurs more often than has been recognized. Many cases have died with the lesion not recognized; have been diagnosed as perforation of the bowel. The accident occurs oftenest in the beginning of the third week and during convalescence; this latter is probably explainable as due to muscular effort. Pain under the left costal arch should arouse suspicion. The normal spleen cannot be satisfactorily palpated. An ice bag should be constantly applied to the spleen. Bathing should be carefully done. A sudden increase in pulse rate should be thoroughly inquired into. Pain is unreliable as diagnostic. The use of adrenalin, ergot and iron seem to be of little value. The only hope is in an operation.

Typhoid Fever in the District of Columbia.—Report No. 3 on the Origin and Prevalence of the Disease, for 1908. Bulletin No. 52, Hygienic Laboratory, U. S. P. H. and M. H. S., 1909; by Rosenau, Lumsden and Kastle. This is the third report of the Board; the other two were for 1906 and 1907, Bulletins 35 and 44. The Board made an investigation of one section of thirty-two city blocks of Washington, containing 5,300 persons; a special search was made for bacillus carriers; specimens of feces from about 1,000 healthy persons were examined for the typhoid bacillus. So far as the fly is concerned, but little connection was established between the fly and the fever. About 50 per cent. of the cases were attributable to importation, to contact with other cases or to infected milk; the actual percentage is probably larger. The water supply was of good sanitary quality. The Board thinks that the work to be done is in the direction of milk infection and contact infection, and recommends pasteurization. There were 679 cases reported to the Health Office from May 1 to Nov. 1, 1908.

The Board thinks that from 10 to 20 per cent. of the cases reported as typhoid are really of other diseases. It gives in detail the method of investigation of cases. The colored population of the District amounts to 28 per cent.; the per cent. of typhoid among the colored is 32. There were 314 cases in males, 228 in females; males compose 48 per cent. of the population, females 52 per cent. The ages ranged from 19 months to 69 years; most cases occurred between 10 and 14 years of age; the next highest ratio was between 15 and 19 years. Twice as many cases occurred among those who had been in the District less than five years than in those who had been here longer. The

death-rate percentage to cases was 13 for white, 13.7 for colored; somewhat higher than for 1907, and lower than for 1906.

The Board suggests the possibility of contamination of the Potomac water by suction or seepage into the mains through loose joints, cracks, etc.; and continued life and perhaps multiplication in the mains of organisms capable of producing fermentation.

There is a custom among milk dealers of exchanging bottles, and of using unsterilized bottles. It is, therefore, possible that bottles which have contained infected milk from one dairy may carry infection to milk supplied by other dairies. No cases were traced to ice cream, but, in view of the bad sanitary conditions under which much of the ice cream is handled, some cases were probably caused by ice-cream infection. It is probable that shellfish caused but few cases. The disease was distributed among persons of many occupations, so that occupation did not appear as a cause.

Paratyphoid Fever—an Epidemic.—Freeman and Marshall, in *Old Dominion Jour. Med. and Surg.*, Dec., 1909, p. 383, report an epidemic that they think was paratyphoid. The diagnosis could not be definitely established by isolation of the specific organism; but the symptoms were very different from those of typhoid fever as seen in Virginia, and the agglutination tests strongly suggested paratyphoid. The epidemic occurred at Weyers Cave, in Augusta County, at the upper end of the Shenandoah valley, in June, 1909. For many years the surrounding country has been afflicted with a disease known as "valley fever," supposed to be a mild form of typhoid. In all, 27 cases occurred in this epidemic. Investigation excluded water as a cause of the disease; the same result as to milk, shellfish, fresh vegetables, fruits and other food. The evidence as to flies was not conclusive.

Tubercle Bacillus, its Viability.—M. J. Rosenau, Bull. 57, Hygienic Laboratory, U. S. P. H. and M. H. S., Sept., 1909, states that there is no easy way of determining the death of the bacillus; its virulence fades before it dies; the criterion of death depends on animal experimentation. The bacillus may be classed with the non-spore-bearing organisms, so far as viability is concerned. The thermal death point is 60 centigrade for 20 minutes, much below what was once considered. Its comparatively short life on artificial culture media strangely contrasts with the long life claimed for it under unfavorable conditions. Failure to recognize the lesions produced by the dead bacillus explains some false conclusions of some experimenters.

Enzymes of Tuberculous Exudates.—Opie and Barker, *Jour. Exper. Med.*, Sept., 1909, p. 686, state from their experiments that the mononuclear epithelioid cells of tuberculous tissue con-

tain an enzyme which digests protein actively in an acid, less rapidly in an approximately neutral medium, but is nearly inactive in presence of an alkali. The enzyme is not inhibited by the serum of a tuberculous exudate, obtained by injecting human tubercle bacilli into the pleura of a dog, but is inhibited by the blood serum. The serum of such an exudate can digest denaturalized protein. This proteolytic activity may disappear just before death.

Mercury Succinimide in Superficial Tuberculous Lesions.—Hertzberg, in *N. Y. Med. Jour.*, Nov. 20, 1909, p. 1014, believes that the drug is almost a specific.

Primary Tuberculosis of Mammary Gland.—Fuller, in *N. Y. Med. Jour.*, Sept. 4, 1909, p. 451, thinks that the disease is more frequent than the literature would suggest. It occurs later in life than reports would indicate; its manifestations do not differ materially from many other conditions, both benign and malignant. An accurate differential diagnosis should be made in order that the proper operative procedure should be followed.

Pulmonary Tuberculosis.—Rohdenburg, in *N. Y. Med. Jour.*, Aug. 28, 1909, p. 400, considers the results of treatment of 172 cases in the outpatient department of the German Hospital, N. Y. City. He says that a fair percentage of tuberculous patients can be cured in cities. There is an urgent need for more day and night camps in the city. Some provision should be made for those who are healed, or partly healed, so that they can live outdoors. There should be better facilities for treating advanced cases.

Genito-Urinary Tuberculosis; Importance of Early Diagnosis.—F. R. Hagner and H. G. Fuller, in *Virginia Semi-Monthly*, Dec. 10, 1909, p. 398, consider this subject, in a paper read before the Medical Society of the District of Columbia.

Tumors; their Protozoan Origin.—Robertson and Young, in *Brit. Med. Jour.*, Sept. 25, 1909, p. 868, have an article on this subject.

Rodent Ulcer; Treated with Potassium Bichromate.—Gemmill, in *Brit. Med. Jour.*, Oct. 23, 1909, p. 1225, reports the case. The drug was painted on the ulcer night and morning, followed by the application of boracic ointment. The treatment covered three months.

X-Ray Carcinoma and other Severe X-Ray Lesions; Surgical Treatment.—Porter, in *Jour. Med. Research*, Oct., 1909, p. 357, on a basis of 47 cases, outlines a treatment to prevent metastases. For details see the paper.

Tumors in the Common Fowl.—Tyzzer and Ordway, in *Jour. Med. Research*, Oct., 1909, p. 459, state that tumors are frequent in the common fowl and are analogous to tumors in human beings. He names especially lymphoma, myxosarcoma and leiomyoma.

Spontaneous Tumors in Mice.—Tyzzer, in *Jour. Med. Research*, Oct., 1909, has an article on this subject too long to abstract. See also another paper, p. 519.

Carcinoma Supervening on Diverticulitis of the Sigmoid Colon.—Giffin and Wilson report this case in *Amer. Jour. Med. Sci.*, Nov., 1909, p. 661.

Malignant Disease Diagnosed by the Antitryptic Index.—Bayly, in *Brit. Med. Jour.*, Oct. 23, 1909, p. 1220, after considering 30 cases of cancer, states that 26 showed a markedly raised index. He says that the negative evidence afforded by a normal antitryptic index is of value in excluding malignant disease.

Cancer; Diagnosis by Examination of Blood.—Hort, in *Brit. Med. Jour.*, Oct. 2, 1909, p. 966, says that a raised antitryptic content appears often to be of the greatest value in distinguishing between an innocent and malignant growth. Its chief value is in distinguishing chronic mastitis and innocent growths from cancer of the breast; simple hypertrophy of prostate from cancer; simple gastric ulcer from cancer; cancer of uterus from simple inflammation.

Trypsin in Cancer.—Rushmore, in *Jour. Med. Research*, Oct., 1909, p. 591, from experiments on mice, concludes that trypsin had no appreciable effect in causing the cancer to disappear or in inhibiting the growth and function of the germ cells.

Cancer of Mouth and Lip.—Laplace, in *Penna. Med. Jour.*, Nov., 1909, p. 102, states that cancer of the mouth is amenable to surgery only in the earliest stages; diagnosis by laboratory methods alone can give a sufficiently early diagnosis. This, however, should be combined with clinical diagnosis. The excision of a portion of tissue for diagnostic purposes is to be deprecated.

Cancer; X-Ray in its Treatment.—Price, in *Penna. Med. Jour.*, Nov., 1909, p. 117, states that the x-ray is very effective in superficial epithelioma of skin; in the treatment of other malignant growths it is only an auxiliary to surgery or a palliative in inoperable cases.

Syphilis without Primary Chancre.—Magian, in *Brit. Med. Jour.*, Sept. 11, 1909, p. 652, reports the case. Two years afterwards there was a reinfection. Eleven weeks after the first in-

fection he began to have a roseolous rash, followed in six months by iritis and three months later another rash.

Treatment of Gonorrheal Arthritis with Vaccines made from the Gonococcus.—Hartwell, in *Annals of Surgery*, Nov., 1909, p. 939, considers the vaccines valuable as a therapeutic agent; but they do not seem able to prevent extension to fresh joints in early cases and do not prevent recurrence.

Persistence of the Gonococcus in the Prostate.—Saxe, in *N. Y. Med. Jour.*, Oct. 2, 1909, p. 629, states that to prevent contamination of the prostatic secretion by pus and bacteria from the urethra this latter should be irrigated before massaging the prostate. Injections of 15 drops of a one-per-cent. solution of silver nitrate into the urethra twenty-four to forty-eight hours before the prostatic massage reveals gonococci when other means fail. Of 150 cases of chronic gonorrheal infection from six months to eighteen years' duration, 60 per cent. showed prostatitis. Of 108 cases of prostatitis studied, 31 showed gonococci in the prostatic secretion. The older the infection the less likely to find the gonococci; after three years they are rarely found, but many and thorough examinations are necessary before we can be at all certain of their absence. Mixed infection occurred in 86 per cent. of the cases; the gonococcus alone occurred in only five of 108 cases; these five were of less than one year's duration. The older the cases the more prevalent the mixed infection. Staphylococci occurred in 74 per cent., bacilli in 28 per cent.; Gram positive diplococci in 10 per cent. and streptococci in 7.6 per cent. of cases with mixed infection. Microscopical examination of the prostatic secretion is absolutely necessary. Gonorrheal prostatitis is curable by proper treatment in most cases. Consent to marriage should not be given until all methods of examination are exhausted and until the possibility of postmarital infection is practically excluded.

Proteolytic Enzymes and Anti-Enzymes of Normal and Pathological Cerebro-Spinal Fluids.—Dochez, in *Jour. Exper. Med.*, Sept., 1909, p. 718, states that the spinal fluid does not normally contain a proteolytic enzyme nor anti-enzyme, whereas blood serum from which it is derived contains both. Both may appear in the spinal fluid in pathological conditions. In infection of the meninges with diplococcus lanceolatus and streptococcus mucosus, free proteolytic enzyme has been found in considerable quantity in four of five fluids that were tested, but was not found in cases of epidemic meningitis. However, in epidemic meningitis some anti-enzymotic action may be present in the early stages of the disease, but tends to disappear rapidly. In chronic conditions, as tuberculous meningitis, five of seven cases tested showed various degrees of anti-enzymotic action.

Blood Pressure in General Paresis.—Schmiegeld, in *N. Y. Med. Jour.*, Aug. 28, 1909, p. 402, states that in order to estimate the blood pressure of any person it is necessary to measure it several times; it is very variable in general paresis, but in most cases seems to be lower than in normal persons. There is no relationship between the mood of the parietic and the arterial tension; elated parietics may have a high pressure and depressed parietics may have a low one.

Intermittent Closing of Cerebral Arteries.—Russell, in *Brit. Med. Jour.*, Oct. 16, 1909, p. 1109, considers this subject. Of its effects he says it leads to impairment or suspension of function, favors thrombosis and hemorrhage.

The Traumatic Neurosis and Babinski's Conception of Hysteria.—Tom A. Williams has an article on this subject in *Med. Rec. N. Y.*, Oct. 2, 1909, p. 557.

Treatment of Tabes Dorsalis.—Tom A. Williams, of Washington, has an article in *Brit. Med. Jour.*, Sept. 25, 1909, p. 851, on this subject.

Case of Traumatic Neurosis Illustrating Successful Psychotherapy.—Tom A. Williams, in *International Jour. Surgery*, July, 1909, reports an interesting case of injury to a railroad brakeman followed by hysteria, the psychic elements of which appear in the history. The prognosis was favorable. The case was explained both to the attending physician and the patient, showing the effects of worry and anxiety on the bodily nutrition and the rôle of ideas over bodily activity. The treatment recommended was the reestablishment of good nutrition, regular exercise, the removal of grief and worry by the assurance of a reasonable compensation for the anxiety and loss he had suffered, and the declaration that if he would follow the treatment he would be able to work in a few weeks and shortly be entirely restored to health. The sequel was as predicted.

Paroxysmal Tachycardia Disappearing after Herpes Zoster.—Turner, in *Brit. Med. Jour.*, Oct. 9, 1909, p. 1026, reports the case.

Orthodiagraphy in the Study of the Heart and Great Vessels.—Clayton and Merrill, in *Amer. Jour. Med. Sci.*, Oct., 1909, p. 549, conclude that while orthodiagraphy should not be considered as a substitute for other well-known methods of examining the heart and great vessels, it is a valuable aid; can be used to make fairly accurate outlines and measurements, so that comparisons can be made with subsequent diagrams of the same case.

The use of the instrument may also serve to prove whether or not the size of the heart is influenced to any appreciable degree by a single effort of exertion or single therapeutic or gymnastic treatment.

Arteriosclerosis; the Nature of the Process.—Adami, in *Amer. Jour. Med. Sci.*, Oct., 1909, p. 485. His main conclusion is that the dominant event, whether in the senile, syphilitic or functional form, is localized or diffuse weakening of arterial wall, especially the media. This induces increased strain on the other coats; this, if not excessive, leads to connective tissue overgrowth and lesions of arteriosclerosis.

The Absence of Respiratory Disorders in Those Who Inhale Starch Dust for Long Periods.—Kaufmann, in *Jour. Hygiene*, Sept., 1909, p. 220, has an article on this subject.

Bronchial Asthma Treated by a Vaccine.—Jones, in *Brit. Med. Jour.*, Oct. 9, 1909, p. 1049, reports five cases. He considers many cases of the disease as due to a bacterial toxin the result of a definite infection and amenable to the corresponding vaccine. He describes the organism and states that it is similar in appearance and growth to Friedländer's bacillus.

Calcium Lactate in Hemorrhage of Upper Air Tract.—Simpson concludes that this salt has a controlling influence in hastening coagulation of the blood. Its efficacy is more marked in hemophilic cases where the coagulation is delayed. The salt should be given in operations for removal of tonsils and adenoids, both before and after operation. The lactate is more positive in its results than the other salts, more agreeable to administer and less irritating to the stomach.

Sodium Benzoate and Bacteria.—Herter, in *Jour. Biol. Chem.*, Dec., 1909, p. 59, states that commercial food preparations containing sodium benzoate one-tenth per cent. were found usually to contain small numbers of bacteria, chiefly of the spore-bearing kind.

Conditions Affecting Discharge of Food from the Stomach.—Hedblom and Cannon, in *Amer. Jour. Med. Sci.*, Oct., 1909, p. 504, states that if carbohydrate food is thinned by adding water, there is within limits very little change in the rate of exit from the stomach; but adding water to protein food tends to make the discharge more rapid. When hard particles are present in the food the rate of outgo from the stomach is notably retarded. Coarse, branny food leaves the stomach slightly faster than similar foods of finer texture. The presence of gas in the

stomach delays gastric discharge; the gas prevents the walls of the stomach from exerting their normal mixing and propelling action on the food. If the food is fed very hot or very cold, there is no considerable variation in the normal rate of exit. Food with approximately normal acidity leaves the stomach much faster than food that is hyperacid; this is in harmony with other observations on the acid control of the pylorus. Feeding acid food is followed by deep and rapid peristalsis. Massage of the stomach, even when extensive, has very slight effect on the passage of food through the pylorus. Irritation of the colon notably retards gastric discharge and delays the movement of food through the small intestine.

Lactic Acid Ferments and Intestinal Putrefaction.—Baldwin, in *Jour. Biol. Chem.*, Dec., 1909, p. 37, considers the influence of lactic acid ferments on intestinal putrefaction in healthy persons. She concludes that the fermented milks give a variety to the milk diet, are found by many to be more appetizing and refreshing than plain milk, and in certain forms of gastric and intestinal indigestion they are better borne than plain milk, but they have no specially favorable influence in controlling intestinal putrefaction when a general mixed diet, including meat, is taken.

Lactic Acid Bacteria; Intestinal Bacteria of Infants.—H. H. Donnally (*Amer. Jour. Obstetrics*, 1909, Vol. LIX, No. 5), in a paper read before the Washington Obstet. and Gynecolog. Society, Jan. 15, 1909, draws the conclusion that the use of lactic acid bacilli is far from resting on a scientific basis; much more will need to be done to determine its value and limitations. Herter is systematically investigating the question.

Influence of the Thyroid on Carbohydrate Metabolism.—King, in *Jour. Exper. Med.*, Sept., 1909, p. 665, concludes that the thyroid exerts a retarding action on the carbohydrate-destroying mechanism of the body. Iodothyrim, the active principle of the thyroid gland, has even a more marked action than the entire gland. The antagonism between the thyroid and the carbohydrate-destroying mechanism is direct. The results of the experiments confirm those of Falta on similar lines.

The Bleaching of Flour.—Halliburton, in *Jour. Hygiene*, Sept., 1909, p. 170. The bleaching is done with the fumes of peroxide of nitrogen, and is accomplished in a few minutes. He finds that the gluten in the bleached flour is comparatively indigestible.

Diet Chart.—Arnold, in *Bost. Med. and Surg. Jour.*, Sept. 30, 1909, p. 457, offers such a chart. It purports to give all the data needed in the practical regulation of the diet in such form that

calculations about the diet can be readily made and the results conveniently recorded. Those interested should see the original paper.

Toxicology of Tin with Special Reference to Canned Foods.—Schryver, in *Journal of Hygiene*, Nov., 1909, p. 253, states that small quantities of tin in food stuffs and tissues may be rapidly estimated by color tests. He believes that there is little likelihood of chronic tin poisoning from using canned goods, but cases have been described of irritant poisoning in which the amount of tin has been ascertained. It is difficult to state just what amount of salts of tin will cause the symptoms; toxic effects will vary with circumstances. Any food stuffs containing as much as two grains to the pound would be suspicious.

Lead Poisoning from a Soda-Water Fountain.—Patch and Taylor, in *Bost. Med. and Surg. Jour.*, Nov. 4, 1909, p. 653, report several cases occurring in the same family. The soda fountain was properly piped from a generator through the fountain, but the cooling coil inside was made of lead.

The Cellular Elements Present in Milk.—Hewlett, Villar and Revis, in *Jour. of Hygiene*, Nov., 1909, p. 271, state that the cells found in milk are for the most part not leucocytes.

Test Meal in Gastric Diagnosis.—Graham and Guthrie, in *N. Y. Med. Jour.*, Sept. 4, 1909, p. 433, regard the test meal as having a place in gastric diagnosis, but caution against its too liberal interpretation independent of the clinical history.

Sarcoma of Stomach.—Clendening, in *Amer. Jour. Med. Sci.*, Aug., 1909, p. 191, reports two cases. An operation was done in one. Both died and post mortem examinations were made. The microscopical examinations showed that the growths were sarcomatous. In one case the tumor was on the posterior wall near the lesser curvature, two inches from the pylorus, and was three inches in diameter; in the other the tumor involved nearly the entire organ.

Intestinal Worms in Filipino Women and Children.—Garrison and Llamas, in *Philippine Jour. of Science*, June, 1909, p. 185, report 385 women and children examined at the Bilibid prison and other institutions; 342 had intestinal worms; 85 per cent. of the women, 95 per cent. of the children. Of the parasites 87.6 per cent. were the trichuris, 53.22 the ascaris, 13.45 the hookworm, and less than one per cent. each the strongyloides, oxyuris and taenia.

Gastro-Enterostomy.—Cannon, in *Bost. Med. and Surg. Jour.*, Nov. 11, 1909, p. 720, states that there is no alteration of peristalsis as a result of an opening being made midway of the stomach. If the pylorus is obstructed, the peristalsis nevertheless forces the food against the pylorus and through it, if possible. In case of pyloric obstruction, food leaves the stomach through the artificial opening made, and the acid chyme doubtless causes a flow of pancreatic juice and bile; the food may not receive a proper admixture of these juices. As a consequence, much of the fat and the protein of the food may pass through the alimentary canal without being absorbed. Experienced surgeons advise against the operation unless the pylorus is obstructed.

Pancreatitis.—Abbe, in *Jour. Obstetrics*, Oct., 1909, p. 621, reports cases.

Chronic Pancreatitis with Tumor-like Nodules in the Cat.—Ordway, in *Jour. Med. Research*, Oct., 1909, p. 451, states that pancreatic disease is very frequent in the cat under natural conditions; forms of chronic inflammation varying from small foci of chronic inflammation and focal and diffuse increase in interlobular and interacinal connective tissue to nodules of atypical glandular tissue and cysts somewhat resembling adenomata.

Appendicitis with Oxyuris in the Appendix.—Ashhurst, in *Amer. Jour. Med. Sci.*, Oct., 1909, p. 583, reports a case.

Ileo-colic Intussusception in an Adult.—Sherren, in *Annals of Surgery*, Nov., 1909, p. 875, reports this case. He says that the lesion begins as an enteric trouble. After passing through the ileo-colic valve the increase in the tumor is by the descent in the colon.

Chronic Constipation.—Gompert, in *Amer. Jour. Med. Sci.*, Oct., 1909, p. 538, recommends the use of agar agar or similar substances in the treatment. Agar agar is excreted practically unchanged. It resists the action of intestinal bacteria and prevents the formation of scybala. He had treated thirty patients. A dose of 15 grams is the usual one in the beginning; this may be reduced to ten or five daily.

Inguinal Hernia in Women.—Coley, in *Annals of Surgery*, Sept., 1909, p. 609, reports that in 353 cases in which he operated there were no deaths and only two relapses; most of the cases were traced. One relapse was caused by heavy lifting; the second occurred in a woman who had been operated on while pregnant, because of a strangulated hernia the size of two fists;

extensive suppuration followed, and when pregnancy terminated the wound had not become firm enough to withstand the strain of childbirth.

Accidental Evisceration of Intestines; Recovery.—Burt, in *Jour. National Med. Assn.*, Oct.-Dec., 1909, p. 229, reports a case in a woman, age 55, who was gored by a cow, after which she walked a mile to her own home, carrying her intestines before her in her soiled hands. There was an eight-inch wound in the abdominal wall. The physician found her lying on soiled bedding, the intestines still exposed, and much soiled with sand, cinders and grass seed. Hot cloths were at once applied; the intestines were then washed and replaced, and the wound closed. The temperature did not rise above 102, respirations 28, pulse 90; the third day these were normal, and she steadily recovered.

Cyst of Round Ligament of Liver.—Henderson, in *Annals of Surgery*, Sept., 1909, p. 550, reports the case. A successful operation was performed.

Bilateral Cystic Kidneys; Diagnosis and Treatment, with Special Reference to the Determination of the Renal Function.—Krotoszyner, in *Amer. Jour. Med. Sci.*, Sept., 1909, p. 329, considers this subject, and concludes that polycystic kidney is nearly always bilateral; where only one kidney seems to be involved, the probability is that the other will be affected in time. Nephrectomy is always contraindicated; nephrotomy with puncture of cysts, decapsulation, and nephrofixation in selected cases may give temporary satisfactory results. The indications for operation are excruciating pain, general sepsis from suppuration of cysts and profuse hematuria.

Exophthalmos and other Eye Signs in Chronic Nephritis.—Barker and Hanes, in *Amer. Jour. Med. Sci.*, Oct., 1909, p. 469, state that exophthalmos often occurs in the disease; an evidence of chronic systemic intoxication.

Fibrolymphosarcoma of Both Ureters Metastatic to a Primary Tumor of the Anterior Mediastinum of Thymic Origin.—Stow, in *Annals of Surgery*, Nov., 1909, p. 901, reports the case.

Tumor of Prostate in a Child One Year and Nine Months Old.—Edington, in *Brit. Med. Jour.*, Sept. 18, 1909, p. 754, reports the case; myxosarcoma. The tumor was large. The child died.

Large Uterine Fibroids: Abdominal Myomectomy.—Kuhn and Frick, in *Jour. Obstetrics*, Sept., 1909, p. 443, recommend this operation for women under 40 if the genital tract can be left intact. It is the operation of choice for fibroids of the lower uterine segment, in pregnancy.

Ovarian Tumor Clinically Malignant Arising from Overgrowth of "Lutein" Cells.—Case reported in *Brit. Med. Jour.*, Oct. 9, 1909, p. 1032, by Savage.

Epithelioma of Vulva.—Balloch, in *Jour Obstetrics*, Oct., 1909, p. 634, reports the case. He recommends that irritating discharges from the uterus or vagina should not be neglected. A chronic irritation is liable to cause cancer. Pruritis calls for a careful search for its cause. If operation is necessary, the earlier and the more thoroughly it is done the better. Even if the disease affects only one side, the glands on both sides should be removed and an effort should be made to ascertain the condition of the pelvic glands.

Eclampsia.—Barrett and Harger, in *Jour. Obstetrics*, Sept., 1909, p. 463, report a case that was accompanied with eclampsia. Among their conclusions is the statement that there are no pathological conditions characteristic of eclampsia; the mortality can be reduced; the treatment should be prompt; the uterus should be emptied; sedatives should be used with care and only as a temporary means; venesection and normal salt solution are valuable aids. Decapsulation of kidneys offers chance for recovery in obstinate cases that refuse to yield to the other measures, but should not be attempted until the other means fail.

Vaginal Caesarean Section, with Report of Four Cases.—Sprigg, in *Jour. Obstetrics*, Oct., 1909, p. 606, reports the cases.

Posture in Obstetrics.—A. F. A. King, in *New York Med. Jour.*, Nov. 27, 1909, has an interesting article on this subject.

Morphin and Scopolamin in Labor.—Halpenny and Vrooman, *Jour. Obstetrics*, Oct., 1909, p. 611. They find that the drugs, carefully used, safely abolish or alleviate the labor pains without bad effects to the mother, although they have noticed delirium, flushings, etc.; in one case there was asphyxia of the child, but not dangerous. Labor was not delayed but rather hastened. The drugs should be used only when the patient is in hospital or has a good trained nurse, not because of danger, but to prevent sympathizing friends from interfering.

Psychoses of Pregnancy and the Puerperium.—E. P. Ballintine, in *N. Y. State Jour. Med.*, Nov., 1909, p. 460, believes that in the *deteriorating* insanities the strain of childbearing may precipitate a psychosis that would, however, occur from any severe physical or mental strain or shock. In the *recurrent* insanities of the manic-depressive type, childbearing is merely an incident connected with one or more of the recurrent attacks. In the *in-*

fectionous-exhaustive group the insanity is caused by infection or precipitated by exhaustion. In a few cases the incidents of childbirth bring to the front symptoms of insanities that may have existed for a year or more.

New Operation for Ingrown Toenail.—Van Meter, in *Annals of Surgery*, Nov., 1909, p. 936, describes the operation.

Dermatitis Exfoliativa Neonatorum.—Myrick, in *Jour. Obstetrics*, Sept., 1909, p. 532, reports eight cases in children at the New England Hospital for Women and Children. He says that the disease is not the same as pemphigus but is closely related, and may occur during epidemics of pemphigus; is highly contagious; demands isolation. The exciting organism is probably the same as in pemphigus, the staphylococcus aureus.

Chronic X-Ray Dermatitis and Early X-Ray Carcinomata; the Pathological Histology.—Wolbach, in *Jour. Med. Research*, Oct., 1909, p. 415, concludes that the factors responsible for the acquisition of great powers to proliferate and eventually the properties of malignancy are furnished by the changes in the blood supply and in the connective tissue. The origin of the multiple carcinomata in primary connective tissue changes, and the attending disturbances of physical and nutritive conditions do not speak for the acceptance of the old ideas of trauma and irritation as causes of the origin of carcinoma. In the case of x-ray carcinoma we are dealing with injuries that are incapable of complete repair and therefore progressive in character.

Naevus Treated with Radium.—Jones, in *Brit. Med. Jour.*, Aug. 21, 1909, p. 451, from notes of 24 cases, states that in 12 there was only one application necessary; in 6 there were two applications; 6 cases were still under treatment. The applications were painless, there were no subsequent dressings and no scar. The results were satisfactory.

Radium and Radiotherapy in Disease of the Skin.—Wickham, in *Brit. Med. Jour.*, Aug. 21, 1909, p. 444, has a lengthy article on this subject.

Phagedenic Ulcer of Abdomen.—Luckett, in *Annals of Surgery*, Sept., 1909, p. 605, reports the case. He says that procrastination and temporizing with internal medication and external dressings came near losing the patient. The actual cautery was the proper treatment.

Pruritus Ani: Etiology and Treatment.—Tomkinson, in *Brit. Med. Jour.*, Aug. 21, 1909, p. 452, says that in his hands the most useful drugs were tar and lead lotion and the mercurial

ointments ; the high-frequency current was also of benefit. Internal treatment, however, is also necessary.

Head Nodding in Infants.—Gibson, in *Brit. Med. Jour.*, Aug. 7, 1909, p. 314, reports two cases, infants 4 and 18 months old ; the rooms in which they lived were dark. They were given phenazone ; the cases ran a course of five or six weeks.

Relation of Thyroid Glands to Glycosuria.—Grey and de Saettelé, in *Jour. Exper. Med.*, Sept., 1909, p. 659, conclude from experiments that the thyroid secretion is in some obscure way connected with the metabolism of sugar in the human body and exerts some control over organs the duty of which is to participate in the metabolism of sugar.

Influence of Thyroidectomy on Alimentary Glycosuria.—McCurdy, in *Jour. Exper. Med.*, Nov., 1909, p. 798, states that removal of the thyroid glands causes a rise in the assimilation limit for dextrose. If the parathyroids are left this rise is permanent.

Diabetes: its Geographical Distribution.—Editorial in *Brit. Med. Jour.*, Sept. 18, 1909, p. 806. The mortality from the disease in London is 8.3 per 100,000; Manchester, 6.6; Edinburgh, 12.7; Glasgow, 7.1; Aberdeen, 5.7; Dublin, 3 to 4; Christiania, 12; Stockholm, 12.5; Copenhagen, 15.8; Amsterdam, 11.8; Brussels, 14.1; Paris, 17.6; Bordeaux, 25.8; Berlin, 20; Munich, 15; Dresden, 11.3; Budapest, 12; Rome, 13; Madrid, 10.5; New York City, 17.4; Washington, 17.3; Boston, 17.9; San Francisco, 20; Worcester, Mass., 27.3; Syracuse, N. Y., 25.7; Rochester, N. Y., 21.6; Toronto, Canada, 15.4; the Province of Ontario, 9.9; Victoria and Melbourne, Australia, common; South Australia, 11; New South Wales, 5.8; Sydney, 9.8; New Zealand, 9; Malta, 37.8; Labrador, none.

Annual Report of the Surgeon General, U. S. Army, for the Year 1908-9.—The following abstracts are made therefrom: Cases of gonorrhea, 7,709; tonsillitis, 3,349; sprain, 3,265; contusions, 2,947; malarial fever, 2,690; acute diarrhea, 2,621; vaccinia, 2,215; acute bronchitis, 1,969; chancroids, 1,945; influenza, 1,891; furunculosis, 1,857; alcoholism, 1,647; muscular rheumatism and myalgia, 1,607; other diseases and injuries in less number. As compared with the preceding year venereal diseases had diminished; malarial fever had much diminished; tuberculosis increased.

Comparing the white and colored races the rate for venereal diseases was for the colored as 281 to 173 for the white; malarial

fevers were one-third more frequent among the colored ; tuberculosis also more frequent among the colored ; alcoholism among the colored was as 20 to 30 in white.

Annual Report of Surgeon General of Navy for 1908-9.—The following extracts are made:

Page 65.—Itch continues from year to year to be the same regrettable reflection on the cleanliness and habits of recruits ; 335 cases occurred ; it requires an average of sixteen days to cure the disease.

Page 65.—Tuberculosis ; 33 cases developed.

Pages 68, 69.—Typhoid fever. The rate of incidence of the disease in the navy is higher than in the army and in civil life. Vaccination has been undertaken.

Page 71.—Venereal disease. Venereal prophylaxis has been instituted. See also page 140.

Page 182, the highest morbidity was from gonorrhea ; page 184, the highest mortality, from drowning.

National Vitality, its Wastes and Conservation.—Bulletin 30, of the Committee of 100 on National Health. Prepared by Prof. Irving Fisher, of Yale University. Govt. Printing Office, 1909 ; pp. 138:

“The problem of conserving natural resources is only one part of the larger problem of conserving national efficiency. The other part relates to the vitality of our population. The two parts are closely interwoven. Protection against mining accidents, forest fires, floods, or pollution of streams prevents not only loss of property, but loss of life. The prevention of disease, on the other hand, increases economic productivity.

“So far as we can compare vital and physical assets as measured by earning power, the vital assets are three to five times the physical. The facts show that there is as great room for improvement in our vital resources as in our lands, waters, minerals, and forests. This improvement is possible in respect both to the length of life and to freedom from disease during life.

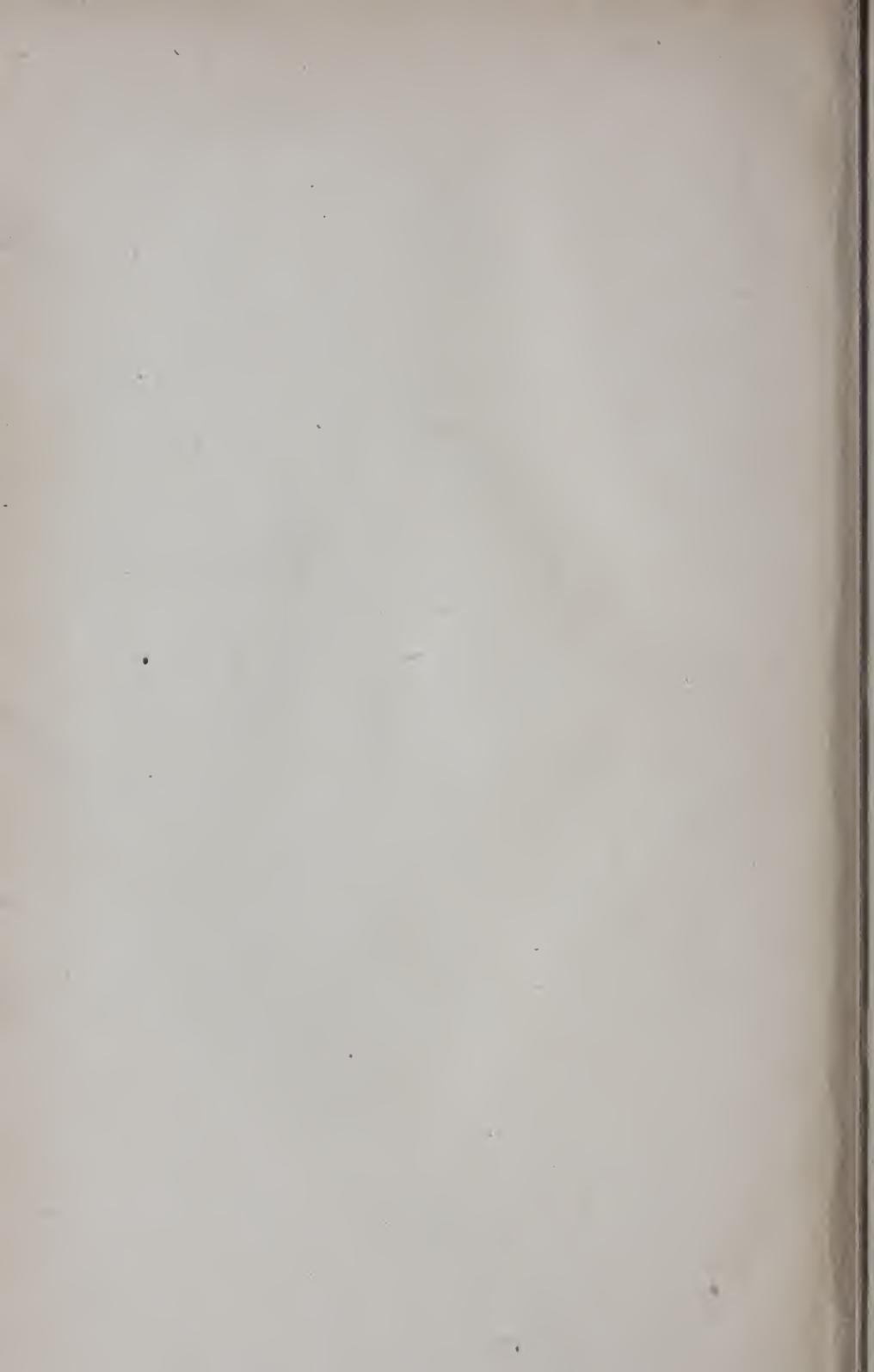
“Contrary to common impression, there is no iron law of mortality. Recent statistics for India show that the average duration of life there is less than twenty-five years. In Sweden it is over fifty years, in Massachusetts forty-five years. The length of life is increasing wherever sanitary science and preventive medicine are applied. In India it is stationary. In Europe it has doubled in three and a half centuries. The rate of increase during the seventeenth and eighteenth centuries was about four years per century, during the first half of the nineteenth century about nine years per century, during the latter half of the nineteenth century about seventeen years per century,

and in Germany, where medical and sanitary science has reached the highest development, about twenty-seven years per century. The only comparative statistics available in this country are for Massachusetts, where life is lengthening at the rate of about fourteen years per century, or half the rate in Germany.

"There is no need, however, of waiting a century for this increase. It could be obtained within a generation. Three-fourths of tuberculosis, from which 150,000 Americans die annually, could be avoided. Eighteen experts in various diseases, as well as vital statisticians, have contributed data on the ratio of preventability of the ninety different causes of death into which mortality may be classified. From these data it is found that fifteen years at least could be at once added to the average human lifetime by applying the science of preventing disease. More than half of this additional life would come from the prevention of tuberculosis, typhoid, and five other diseases, the prevention of which could be accomplished by purer air, water, and milk. In Lawrence, Mass., after the installation of a pure-water supply, the death rate from typhoid was reduced by 80 per cent. For every death thus saved from typhoid, two or three deaths are saved from other diseases.

"Judging from the English statistics of illness, we must conclude that at all times in the United States about 3,000,000 persons are seriously ill, of whom about 500,000 are consumptives. Fully half of this illness is preventable,

"If we appraise each life lost at only \$1,700 and each year's average earnings for adults at only \$700, the economic gain to be obtained from preventing preventable disease, measured in dollars, exceeds one and a half billions. This gain, or the lengthening and strengthening of life which it measures, can be secured through medical investigation and practice, school and factory hygiene, restriction of labor of women and children, the education of the public in both public and private hygiene, and through improving the efficiency of our municipal, state and national health service. Our National Government has now several bureaus exercising health functions, which only need to be concentrated under one department to become coördinated parts of a greater health service worthy of the nation."



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